

Children's relationships with their physical school:

Considerations of primary school architecture and furniture design
in a social and cultural context

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Abstract

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In recent years substantial investment has been made to replace or refurbish state schools in England and Wales and, although research has unsuccessfully sought to prove its contribution, the discipline of Design continues to be identified as a facilitator of educational transformation.

Results to date, however, are mixed and there is an evident failing at the design briefing stage to understand how children interact with their educational settings and, notably, an avoidance of direct challenge to the primary school classroom and its practice. In response, this thesis asks how the social and cultural study of children's relationships with their physical school can suggest a meaningful approach to primary school architecture and furniture design.

A model of well-being is developed to clarify misused terminology and to present a realistic expectation of design in which the contradictory goals of inclusion and the development of the individual are appraised. Sitting within a diverse grounded methodology, the concept of belonging is then explored as a basis for evaluating the contribution of different aspects of the physical school to children's well-being.

The primary school environments studied were found to limit the possibilities of a child's well-being. School architecture through to classroom wall displays were complicit in restricting physical and social expression in favour of school organisation and, furthermore, the central child-teacher relationship was found to be unnecessarily devalued by behavioural concerns derived from the setting.

By ethically interpreting the rich variety of children's voices, priorities for what is coined here as child-teacher centred design are established and a clear relationship between architecture and furniture is offered. The thesis recommends that architecture continues to perform a protective classroom role to support objectives of inclusion whilst school furniture supports more affective, individualistic goals through less prescriptive and more varied settings for learning.

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I owe a great deal of gratitude to all three schools involved in my primary research. Reflecting now on the education of primary school children, it is a serious subject and this thesis has grown to represent that. Perhaps therefore it is not obvious in the writing but the research has been great fun and having the opportunity to discuss slimy bricks or poisonous ivy or even poorly grandparents with children was a privilege.

Whenever I needed to remind myself of what organisation and efficiency was like I could always rely on Debra Harper at Buckinghamshire New University to provide this and, in the closing stages, appreciation is due to Dr William Lishman for guiding me in to land.

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As yet I am unaware of advice which suggests unplanned fatherhood contributes to the successful completion of a PhD. However, the richness this has added to my life and the motivation it has inspired mean that I would highly recommend it; I dedicate this thesis to my loves, Margot and Klara.

Author's declaration

Unless otherwise stated in the text, the work submitted in this thesis is my own. I have necessarily referred to and fully acknowledged the work of others to inform the context and the arguments of this thesis. However, the evaluation of such work and its relevance is entirely my own.

No part of the work presented has been submitted in support of a successful or pending application for any other degree or qualification of this or any other University or of any professional or learned body.

I confirm that this is a true statement and that, subject to any comments above, the submission is my own original work.

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List of abbreviations

| | |
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| BCSE | British Council for School Environments |
| BSF | Building Schools for the Future |
| CABE | Commission for Architecture and the Built Environment |
| FPF | Favourite Place or Feature (Primary study – Chapter 4) |
| GBHS | Good Bad Happy Sad (Primary study – Chapter 5) |
| GDBD | Good Day Bad Day (Primary study – Chapter 3) |
| PCP | Primary Capital Programme |
| PEL | Practical Equipment Ltd |
| PWC | PricewaterhouseCoopers |
| RIBA | Royal Institute of British Architects |
| TIOLI | Take it or Leave it (Primary study – Chapter 4) |

Chapter 1: Aspirations for a new generation of primary schools

1.1 Introduction

Of all the projects an architect can be asked to design, none can be more interesting and challenging than the school – in which the most important of human activities, the education and development of our children, takes place (Lawson, 2000, p.vii).

1.1.1 My intentions

In this thesis I question how the study of children's relationships with their physical school environment in a social and cultural context can suggest a meaningful approach to primary school architecture and furniture design.

Why might this enquiry be important? A head teacher claims that having 'a wonderful sports hall and toilets has improved self-esteem (DfES, 2006a, p.45);' innocuous perhaps but this carefully selected comment in the Government's *Every Child Matters* policy document raises questions which are pertinent to the design of tomorrow's schools and its associated frustrations. The Government certainly aspires to new schools in which the physical environment provokes a positive psychological impact (Miliband, 2003), but can design honestly claim to have such an immediate and direct consequence?

I am intrigued by the extent to which the physical school environment, and hence its designer, can realistically claim to effect lasting states of mind. I have previously addressed the development of creativity, which Craft (2005) identifies to be a quality central to the Government's pursuit of intellectual capital in a global economy, by adapting the physical environment in which children learn. Despite knowing that the resultant furniture was popular with both the children and the teachers, that it was new and added variety in a very predictable and uniform classroom environment, I questioned whether, through design, I had changed the way the children think or create. I doubted it.

Personally I lacked an understanding of how children interact physically and psychologically with school environments and, more fundamentally, how this is influenced by the culture, traditions and objectives of schools. Subsequently, I have identified the same absence of awareness in briefs for the new schools currently being designed and built as part of *Building Schools for the Future* (BSF) and the *Primary Capital Programme* (PCP).

Higgins, Hall, Wall, Woolner & McCaughey (2005) maintain that the basics of school design such as air quality, daylighting and ergonomic issues of comfort, for example, are contributory to children's outcomes at school; however, my intention is to offer research examining the more ambitious goals of design in schools. By studying the psychological results which are aspired to, such as self-esteem and inclusion (DfES, 2003b), the aim is to assist a designer embarking on the design of a *child-centred school* which, as Darling (1994) notes, more affective schools are commonly known. In other words this thesis plans to inform the design brief by recommending new ways to consider design; it is not, however, an exercise in design itself.

Based on the findings of the Commission for Architecture and the Built Environment (CABE, 2006), initial evaluation of our new schools is not promising, yet these judgments are arguably based on measures reflecting the same lack of knowledge which impedes design in the first place. Moreover, irrespective of the lack of clarity, major funding has brought calls for transformation in Education in which technology, as Pierson (2005) describes, can be regarded as a panacea replacing the unfulfilled role of architecture in the last major round of primary school building (Bennett, 1980). On balance, however, Brogden (2007) remarks that mainstream Education does not fare well with wholesale change and speculation about where Education is going combined with an apparent denial of what it currently is, I will argue, are hampering progress as it is currently conceived.

The research presented in this thesis is therefore concerned with understanding children in the mainstream primary school settings of today and integrating design with the broader social and cultural concerns of Education. Furthermore I recognise that the physical school extends beyond architecture and furniture to encompass a plethora of toys, pictures, rulers, notices, crucifixes, bricks, patterns and coat hooks, for example; I consider their relationship with the traditional focus of school design and their combined contribution to the child's school experience.

In this chapter I will consider the aspirations for children in their new schools and how these can be conceived, through the development of a model of well-being, as realistic design objectives. This directs the overall methodology and thesis structure discussed at the end of this chapter.

1.1.2 Ambitions for a new era of school design

The research is timely. Within the last five years the Government has embarked upon two major school building programmes which seek to replace or refurbish the majority of primary and secondary schools in England and Wales (Teachernet, 2008). This involves considerable sums; Burr (2009) estimates BSF alone at between £52bn and £55bn whilst PCP, involving more

refurbishment and covering roughly half of the primary schools, is expected to cost £7 billion (Inside Government, 2009).

The replacement of schools on this scale is a rare opportunity which, according to Dudek (2000), presents itself roughly once every 35 years and, as a consequence, carries with it a considerable weight of expectation. The architect Feilden described this as an 'extraordinary opportunity to improve the education of future generations (CABE, 2004, p.4).'

The announcement was roundly welcomed and considered long overdue by many (Clark, 2002), reflecting a widely held view that British schools 'are largely representative of our past, not our future (BCSE, 2007, p.5).'

 Therefore, an extensive school building programme would seem to be an opportunity for teachers, with the assistance of brand new facilities, to do what they currently do but even better. However, while the British Council for School Environments (BCSE) indicates that our school buildings are old, it equally infers that they are educationally outdated and ill-equipped to support notions of 21st Century Education. Such ideas acknowledge that the lives our children will lead would be unrecognisable to the Victorian child yet, as Hargreaves (1994) points out, the educational setting is currently almost identical.

Transformation is a widely used term (Gilbert, 2006; Heppell, Chapman, Millwood, Constable & Furness, 2004; Page, 2008) which Caldwell (2006) describes as 'significant, systematic and sustained change that results in high levels of achievement by all students in all settings (p.6).'

 However, while its definition is helpful, educational practice is perceived to have been fundamentally immune to such transformation and relatively static for more than a hundred years. The classroom:

.....at every stage of its development would be immediately familiar to any teacher since 1876. Throughout, the common experience of a single teacher interacting with a group of children in the pursuit of learning remains the enduring characteristic of that confined and private space that we know as the classroom (Gardner, 1998, p.35).

Notably, Caldwell (2006) acknowledges that transformation, as he has defined it, has only ever been partially achieved.

The persistent and familiar look of schools has been implicated in this lack of progress. Critics, such as Greany (2005) and Dudek (2000), bemoan the physical form of the Victorian Board schools whose central hall and surrounding classrooms, they claim, reinforce an antiquated

pedagogy and have endured any fundamental challenge since that time. This argument is clearly illustrated in Figure 1-1.



Figure 1-1 Observations of a persistent educational form. Photograph. Source: Design Council (2005)

The classroom is generally considered the basic component of traditional school design and with the focus on transformation, it is currently viewed as a pariah, existing as a support, and being supported by, current retrospective teaching practice (Dudek, 2000). Certainly the implication is that schools based on the classroom format are somehow holding education back and further criticism persists of the rote learning culture which Greany (2005) and Hertzberger (2008) argue are symbolised and engendered by rowed secondary school classrooms, for example.

Meanwhile, the purpose of the capital investment in schools is to support a cultural shift in Education away from such practice; Gibbons (Greany, 2005), representing the Design Council's Learning Environments Campaign, explains:

..... this government is committed to creating a very different education system - a personalised system that engages the curiosity and develops the talents of all our young people so that they achieve their potential (p.11).

Where children were once considered a homogenous group, which is arguably reflected strongly in the architecture and the furniture of schools shown in Figure 1-1, Education now seeks to treat each child as an individual and personalise their development accordingly; this, Gilbert (2006) claims, will enhance children's 'progress, achievement and participation (p.3).' Ostensibly this is a highly incontrovertible and appealing proposition in what is generally described as a child-centred

approach, although the Government distances itself from the historical connotations of this term (BECTA, 2009).

Personalised learning is a pedagogy; on the other hand child-centred schools arguably represent the broader culture necessary to support it, encompassing a philosophical tradition which Nicholson (2005) identifies as many centuries old. Relevantly, van Harmelen (1998) makes a similar distinction between the terms child-centred and learner-centred, although recognising a large overlap of territory. The continuing pursuit of child-centred schools, I suggest, further exposes the complexity of the demands placed upon design by entertaining more diverse affective objectives linked to, but beyond, personalised learning.

Therefore as a nation we may desire new inclusive schools designed to inspire and promote self-esteem but, from a design or educational perspective, what does this actually mean, and can it really be translated intelligibly into physical school environments?

Arguably uninformed, the language of design becomes inhibiting rather than helpful, and exposes an absence of clarity combined with a perceived lack of experience; rightly, Goddard comments that 'We're not going to get what we want by mentioning 'transformation' 11 times in a speech (Tickle, 2008, p.25).' Heppell also expresses a general lack of confidence in the ability of design to deliver 21st Century Schools:

'....designing a room for learning is very complex. No one knows how to prevent 'learning-loss' when you design a room "pedagogically", whereas we know lots about designing for minimum heat loss (Higgins et al., 2005, p.3).'

Design typically begins with a brief, a detailed outline of what is needed and why; often it is expressed as a design problem to be solved and Phillips (2004) argues that the brief should include what is known about this problem. I maintain that the school design briefs, in a climate of uncertainty, offer designers mixed messages.

In 2003 the Government invited a number of architects to produce exemplar designs; their purpose to inform and lead the programme for both primary and secondary schools (DfES, 2003a). The primary design brief, of which Parts 1 and 2 are provided in Appendix 1, is particularly revealing. On the one hand the brief reflects the aspirational words of Blair (2004) and Miliband (2003) stating that 'every school will have its own philosophy for providing every pupil with the best possible education to allow them to achieve their potentialThe internal and external

environment of the schools must clearly allow for this without compromise (DfES, 2003b, p.2).’ Equally the brief demands a school design which meets the needs of all users, is central to the community, and encourages ‘well being, self-esteem, a sense of ownership (DfES, 2003b, p.3).’

On the other hand, I contend that the brief is deeply conservative and stifled by history, cost and caution. For example, the brief stresses that, whatever the future, ‘a basic level of relatively traditional teaching areas will currently be required’ and that ‘the majority of primary schools continues to require classrooms, perhaps with some shared teaching areas, as well as smaller support spaces and halls (p.8 & 21).’ The echoes of Robson’s *School Architecture* (1877) and the Board schools of the late Victorian era are undeniable, with the impending risk of schools, once again being ‘representative of our past, not our future.’

Overall the Government’s ambitions and Gilbert’s (2006) speculation on transformation through *personalised learning* is evidence that, today, school design is taking place before a conceptually radical pedagogy has been fully articulated. In effect this leaves the design community to draw inspiration from the wording of the discussion which concentrates on desired, yet misleading outcomes, as opposed to the practical reality of Education. As Lawson remarks, ‘we know precisely what we want to achieve in a school and yet we are clearly uncertain as to how it should be realized (2000, p.vii).’

Designing for an educational practice which is not yet evident in schools is highly ambiguous. If Black’s (2006) view is accepted that ‘the most successful designs come from understanding the needs of the people that use them (p.1),’ then designers are challenged to design for a future scenario based on future children and future teachers. Thus Miliband reasonably asserts that ‘flexibility is key (2002, p.1)’; nevertheless the words of the relatively unfamiliar post-War architect David Medd are cautionary: ‘to design for everything is to design for nothing (1998, p.2),’ and will be discussed further in Chapter 2.

In the meantime, the first new schools are starting to be labelled ‘new old’ buildings (Watson, 2008) and despite the perseverance of the school building programmes, the sense that school design has reached an impasse is overwhelming with Booth & Curtis (2008) describing eight out of ten secondary schools described as either mediocre or not good enough. Of great concern must be the risk of compromising the education of children for the foreseeable future by inadequate facilities, a situation expected to be exacerbated further with impending investment cuts (Sugden, 2009).

1.2 Child-centred schools – a 2010 perspective

I have suggested that personalised learning dominates the educational design agenda, under which circumstances it would be easy to consider it the most important element of, if not synonymous with, child-centred schools. Certainly in theory it relates to the learning content, method and formal and informal environment in which an individual child's learning will progress, much of which is directed and determined by the child:

The aim is to enable pupils to understand themselves better as learners and so take greater control of and responsibility for their learning, transferring and applying a widening repertoire of learning approaches in different subjects and contexts. They also offer a language for talking about learning which goes beyond reductive notions of 'learning styles' to focus more clearly on cognitive and affective development (Miliband, 2007, p.3).

It is important to understand the motivations for this individualistic approach to Education and appraise how child-centred they are. Firstly I propose that, primarily, personalisation is economically motivated. The Government explicitly illustrates the importance placed upon an individual's long term economic prosperity and, equally, their economic contribution (DfES, 2006a). In theory, those currently in Education will determine the future prosperity of the economy; business has therefore had a vested interest which both van Manen (2005) and Burke & Grosvenor (2003) argue, has manifested itself in a pervasive effect on Education.

The curriculum is ideally placed to be adapted based on conceptions of economic well-being and, reflecting the perceived direction of the economy, Quigley (2008) notes a growing shift from knowledge-based to skills-based education. This is entirely allied to the personalisation/individualisation of Education which Gilbert (2006) maintains reflects the demands of the global economy. For instance, at the turn of this century, Wise & Baumgartner (1999) estimate the UK service economy to be 70% of the whole which Kendrick (2002) considers to be underpinned by the phenomenon of intellectual property. He evaluated the ratio of intangible to tangible assets in business identifying that, over the last seventy years, this ratio has changed from 30:70 to 63:37.

By seemingly focusing attention on the individual, the Government is investing in future intellectual capital; in particular, creativity is now considered an economic resource (NACCCE, 1998) and in this context, Ridderstrale & Nordstrom (2004) argue that we need more, not less, non-conformists: 'today the scarcest resource is not investment but imagination (p.81).'

One might argue that the interest in the individual child therefore is contrived and does not really reveal an interest in the child per se. Certainly it is arguable that the courting of child-centred schools, on balance, does not stem from the developmental needs and nature of the child as argued by the likes of Rousseau (2004), Dewey (1938) and Piaget (1975) and being able to make this link, I would argue, is a convenient coincidence. However, there is a counter argument made by Arthur (2003) that preparing a child to participate effectively in the economy in adulthood is indeed in the interests of the child and therefore child-centred.

Whether the motivation for child-centred schools is disingenuous or not, what is most relevant is that personalised learning and its effect on the child's experience at school remains largely speculative; Rudd (2008a, p.7), considering the view that 'personalisation has been put forward as being central to Education but, as yet, its very nature remains insufficiently defined,' determines that personalised learning should be seen as an ongoing evolving process rather than a one-off delivery. The stubborn practice and supporting physical environments are evidence, I maintain, that Education does not fare well with revolution, as Brogden (2007) argued, and the effective evolution of personalised learning requires a route into the current culture, or a starting point. In this respect transformation, a journey which Rudd (2008a) therefore argues is necessarily undefined, must require an understanding of Education today and, from a design point of view, how the physical school influences children.

Despite the theoretical possibilities of personalised learning in which the whole of the child's school experience is embraced within a formal and informal learning context, certainly today a child's experience at school is much broader than current conceptions of learning; both Willms (2000) and Libbey (2004) highlight the narrowness of the current reality of learning and attainment. In fact they indicate that both learning and attainment are predicated by other more social factors. Therefore, while learning may be considered to be at the heart of any school it would be wrong to simply assume that it will be the sole determinant of the child's happiness and long term prosperity. It is important, therefore, to look both at and wider than the child's current learning and attainment experiences and, as the economic motivations reveal, their individualism.

This *broader than learning* approach is not in fact contradictory to the Government's 2010 pre-election strategy. Within the last ten years policy has begun to recognise the schools' wider responsibility to children beyond learning, which currently presents firmer ground on which to consider child-centred schools. White (2005, p.97) claims it is only since 2000 that the Government has 'laid down for schools, in any detailed way, what their aims should be,' with respect to helping the child lead a 'flourishing life.'

With this in mind, Gillard (1992, p.1) describes child-centred education as starting 'from where the child is, acknowledging the child's integrity and regarding his/her needs and interests as paramount.' Accordingly, UNICEF describes child-centred schools as 'acting in the best interests of the child, leading to the realisation of the child's full potential ... (2004)'. While this mirrors the motivations behind the Government's vision of personalised learning, which Gilbert (2006) describes as 'taking a highly structured and responsive approach to each child's and young person's learning (p.6)', it sits within more expansive notions of what can be described as the child's *well-being*.

Recent legislation exposes this policy. The Education and Inspections Act 2006 (London: Stationery Office) obligates the 'governing body of a maintained school' to 'promote the well-being of pupils at the school (DCSF, 2008, p.3),' and to secure community cohesion (West-Burnham, 2008). The Act goes on to define a child's well-being in terms of 'physical and mental health and emotional well-being'; 'protection from harm and neglect'; 'education, training and recreation'; 'the contribution made by him to society'; 'social and economic well-being (DCSF, 2008, p.8).'

In this way, well-being is defined legally to comprise a breadth of multiple and diverse factors, of which economic well-being could be argued to take a dominating position.

Explanations of how well-being is sensed by an individual centre round holistic feelings of life satisfaction and contentment (Konu, Lintonen & Rimpelä, 2002a) or the degree to which quality of life is considered favourable (Veenhoven, 1991). Therefore, while well-being can be considered a highly complex entity of cause and effect it is considered to have a relatively simple psychological manifestation (directing the approach of Study 1 presented in Chapter 3). It is, however, the cause rather than the effect that is of most interest to educationalists but White (2005, p.97), recognising a lack of understanding, argues, 'if foremost among the values which underlie a national education system is the well-being of the individual, policy-makers need to be able to say what that well-being consists in.'

The Government has certainly attempted to define well-being in terms of the positive outcomes embodied in the Education and Inspections Act 2006. Its *five outcomes*, central to the *Every Child Matters* programme (DfES, 2006a), are described as 'to be healthy, stay safe, enjoy and achieve, make a positive contribution and achieve economic well-being (p.13).' This provides a simple philosophical focus for schools, yet it is not an academically comprehensive list; Dunne (2005) would question the absence of spirituality, for example. Nevertheless, it is not uncommon for the

Government and educationalists to prioritise the preferred outcomes of school which arguably are often transitory priorities. In the 19th Century, for example, Dr Thomas Arnold of Rugby School suggested a quite different set of priorities as ‘first religious principles, secondly gentlemanly conduct, thirdly intellectual ability (Dixon & Muthesius, 1978, p.241).’ Although UNICEF interprets child-centred schools as ‘acting in the best interests of the child (2004, para. 4),’ requiring a consensus on what constitutes a child’s best interests, a common and persisting premise is that Education defines its purpose based on a broader view of a child’s future contribution to society. In this way I suggest that a child’s well-being might be equated more closely with citizenship than with individualism.

In this reading of child-centred schools, it is evident that well-being is subject to cultural and societal norms which many do not agree should determine the individual; Saint (1987), for example, chooses to define child-centred schooling as denying ‘that the needs of the state, the church or the economy ought to shape the development of a child’s expanding consciousness (1987, p.39).’ This purist definition stems from the popularisation of the concept by Rousseau (2004) which was developed further by a succession of 18th/19th Century educationalists including Pestalozzi and Froebel, as outlined in Darling (1994).

Ross (2000, p.4) explains the basis of Rousseau’s view of child-centred education, summarising the premise that ‘the child will develop naturally, given a suitable environment; the child’s development is best self-directed; the role of the teacher is to enable learning not to transmit knowledge; and the learning process should be organized for individuals and not class-sized groups.’ Rousseau, and to some extent Saint (1987), are describing a pure form of personalised learning where the individual pursuit of learning is in fact the entirety of the school, at which point personalised learning does become synonymous with a child-centred school.

As a result of the two philosophical stances, Olson (2003, p.4) identifies a ‘widening gap between proposals for school reform, one group seeing the achievements of the collective as primary, the other seeing the experience, beliefs, and goals of individual learners as primary.’ The definition and understanding of child-centred schools can therefore initially be viewed across a spectrum (Figure 1-2), which indicates the philosophical contention in Education which Olson describes.



Figure 1-2 Initial representation of the child-centred spectrum. Developed by the author

Dunne (2005) however argues that Education cannot be independent of the state or the economy, revealing a belief that Saint's definition is purely a theoretical viewpoint with limited practical application. Indeed Rousseau's (2004) ideas, though highly influential, have been criticised for their lack of appreciation of the child's social environment (Ross, 2000). Dewey (1930), perhaps the most influential progressive educationalist of the 21st Century, interpreted these child-centred ideas in a much more sociological way underpinning Dunne's (2005) stance that, 'any state must expect its schools to perform a strong socialising function – to equip young people with kinds of knowledge, skill and conviction that will fit them for citizenship as it is defined in that state (p.147).' This consensus is also supported by Ross' (2000) argument that 'Contemporary child-centred education, or progressive education, is no longer based on the naive assumption that educators must not interfere with children's development, or that such development will not be deeply affected by the social context in which the child develops (p.138).' There is a strong consensus which identifies the connection between well-being and an individual's ability to fit into society and which contradicts the polar contention of Figure 1-2 to argue that the development of the individual is in fact a subset of the school's socialisation role in producing citizens, as illustrated in Figure 1-3. Figure 1-3 follows from the theoretical basis of the *Wheel of Wellness* presented by Myers, Sweeney & Witmer (2000), shown in Appendix 2.

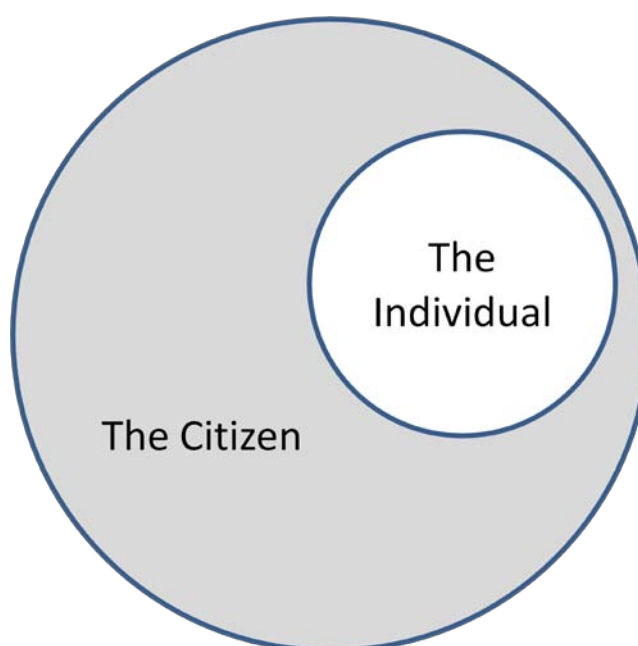


Figure 1-3 The dual responsibilities of schools and their relationship – further representation of child-centred interests. Developed by the author

In summary, today's interpretation of child-centred schools can be argued to be an investigation of well-being which is a diverse entity, defined, I would argue, simplistically by the Government in

its *five outcomes*. Although personalised learning is evidence of the priority being placed on ensuring the country has the necessary skills to compete in the global market place and of the perceived assets of individualism and creativity, for example, in many ways the preoccupation with personalised learning in the discussions about design denies the broader socialisation role of schools.

The transformation which is discussed, I propose, is viewed as a philosophical choice between individualisation and socialisation, or the individual and the homogenous group, but investigation of the broader educational debate beyond design suggests that this is not a realistic objective.

White urges that 'individuals are not the final authority on their flourishing (2005, p.106).' He argues that individuals should be guided by the collective wisdom which has created a common value system over time; culture and society in other words.

1.3 Interpreting well-being – developing a literature-based model

Section 1.2 allied the concept of child-centred schools to well-being and, ostensibly, it is difficult to dispute the wish to improve how a child feels and, referring to Veenhoven (1991), perceives the quality of their lives. Despite the obvious susceptibility of well-being to society's judgments of what is of value, this section will derive some consensus on what influences well-being on a more objective level.

In today's context well-being may be fundamental to the child-centred school but the translation of this concept into meaningful physical environments, I suggest, is complex. On its own, well-being is not well understood at a practical level, and as a result it is difficult to identify what the school or the designer can specifically do to promote it.

In addition, the language surrounding PCP tussles with other interrelated and potentially worthy terms, describing: 'attractive support and personal spaces to encourage well being, self esteem, a sense of ownership, along with a positive relationship between the school and the local community (DfES, 2003b, p.3).' In order therefore for this debate to help rather than hinder child-centred design in a 21st Century context, it is essential to understand what these words mean and how they link together; in other words providing the foundation to start to develop coherent school design briefs.

Even within the Psychology community, the interrelationships of terms are unclear. While the endeavours of psychologists to name and investigate thousands of human traits are recognised,

Judge, Erez, Bono & Thoresen (2002) note criticism that ‘these labors have produced independent literatures that evolved from related traits with little consideration of their possible common core (p.693).’ Equally, Watson & Clark (1984) note that, ‘distinct and segregated literatures have developed around a number of personality traits that, despite dissimilar names, nevertheless intercorrelate so highly that they must be considered measures of the same construct (p. 465).’

I therefore take a cross-disciplinary approach to develop a model of well-being which, suspecting that current school design aspirations may be unrealistic, aims to ascertain a realistic and informed expectation of design. The model provides a framework with which to appraise the pursuit of desired psychological or affective design outcomes, such as self-esteem and inclusion. By exploring well-being informed by a range of literature covering theories on human needs, development, capabilities and communities, I build the model through a series of iterations; initially these iterations largely reflect concerns of the individual child but which, as the model evolves, increasingly draw upon conceptions of citizenship, a relationship represented previously in Figure 1-3. Moreover, contending that the popular discourse and briefs direct designers firmly towards personalised learning, I endeavour to establish the relationship between the individual’s learning and broader child-centred concerns. Overall, the well-being model is intended to guide the investigation of children’s relationships with their physical school in subsequent chapters.

Reflecting the tradition of divergent terminology indicated by Judge et al. (2002) above, existing models of well-being take various diagrammatic forms and names, and well-being is sufficiently pliant for such models to service the underlying area of interest and agenda of the author. For example while Maslow (1943) and Max-Neef, Elizalde & Hopenhayn (1989) interpreted well-being in terms of the satisfaction of human needs, exposing an alternative agenda, Nussbaum (2000) has preferred to concentrate on the fulfilment of human capability in the context of women’s well-being. Equally, while the Konu & Rimpelä (2002b) conceptual model of school well-being is evidently motivated by an interest in health, policy-based governmental models have arguably led to a great deal of effort in defining well-being in the pursuit of meaningful quantitative measurement. This includes the consideration of social, psychological, subjective, objective and physical well-being; Hird (2003) argues that such efforts to differentiate are so far inconclusive and quite possibly unnecessary.

Diagrammatically, the field is confronted by matrices (Max-Neef et al., 1987), pyramids (Maslow & Frager, 1987), venn diagrams (Smith, 2006), and even symbolic flowers (Kana’iaupuni, Malone & Ishibashi, 2005), perhaps reinforcing the assertion that the breadth of well-being as a concept

allows it to be interpreted in many ways to advance a particular argument. (Appendix 2 illustrates some of the models described).

The specific aim of this thesis in developing a well-being model is to discuss affective outcomes of design which, recognising Hird's (2003) reservations, does not attempt to distinguish between highly interconnected aspects such as social and psychological well-being for example. Most importantly, and unlike existing models, I introduce the element of time in which different outcomes emerge as critical in the evaluation of well-being in the context of (school) design; this is explained in Stage 1 which follows.

1.3.1 Stage 1: Starting with the Government's position

This thesis argues that, in design, understanding the client is as important as understanding the brief, and, consistent with established user-centred design principles (Olphert & Damodaran, 2004), concerns itself with the true client of child-centred school design, the child. However, recognising also that 'individuals are not the final authority on their flourishing (White, 2005, p.106),' the Government, the author of the brief, and its perspective on a child's well-being presents a valid starting point.

The model begins with an observation of the specific nature of the *five outcomes*, which represent a translation of the requirements of the 2006 Education and Inspections Act into a description as opposed to a definition of well-being. To reiterate, the *five outcomes* are 'to be healthy, stay safe, enjoy and achieve, make a positive contribution and achieve economic well-being (DfES, 2006a, p.13)' which can be observed to emerge at different stages of a child's school existence. For example, I argue that a six year old boy may experience enhanced *enjoyment* today but it is likely to be in many years' time when he is able to experience *economic well-being* of which he is the creator.

This time element is fundamental to the development of the well-being model and in keeping with other definitions of well-being; Woodill, Renwick, Brown & Raphael (1994), for example, indirectly acknowledge the importance of time by describing well-being in terms of being, belonging and becoming. The well-being model is therefore concerned with when a school or its design can induce an affective change in a child and therefore how direct this influence is. Due to the experiential nature of the physical school, an appreciation of time periods could arguably help to unlock the practical significance of well-being by identifying the possible contribution of design in the day-to-day experience of the child.

1.3.1.1 Definitions of time periods within the model

Within England and Wales there are presently four key stages in primary (Key Stage 1 and 2) and secondary (Key Stage 3 and 4) education which determine the administrative structure of Education (HM Government, 2009). This is illustrated in Table 1-1 and excludes the early years, or Foundation Stage, and Key Stage 5, better known as the sixth form.

| Key Stage | Year | Age |
|-----------|------------------|--------------------------------|
| KS1 | 1 and 2 | 5 years to 7 years |
| KS2 | 3 to 6 inclusive | 7 years to 11 years inclusive |
| KS3 | 7 to 9 inclusive | 11 years to 14 years inclusive |
| KS4 | 10 and 11 | 14 years to 16 years inclusive |

Table 1-1 Key Stages - England and Wales. Source: HM Government (2009)

Figure 1-4 on the following page uses these categories to show a timeline representing the child's progression from Key Stage 1 to adulthood. This is consecutively related to a short, medium and long term timeframe; short term is considered to be within an academic year, medium term is between 1 and 6 years which, if the children had just started primary school, would take them up to primary leaving age, and long term is beyond 6 years. There are limited precedents for defining short, medium and long term timeframes and therefore these have been put forward to reflect what occurs within the primary school, i.e. until the age of 11, and what can occur subsequently.

1.3.1.2 First iteration of the well-being model

Enjoyment and *economic well-being* were offered as an example of two of the *five outcomes* which can surface at different times and these are shown in their relevant time period in the first iteration of the well-being model shown in Figure 1-4. The model acknowledges that a child, by school age, will already have a disposition towards enjoyment in terms of their ability to enjoy themselves and their sense of enjoyment, i.e. what they perceive to be fun (Schrodt, 1992). Based on what happens at school, I argue that changes in enjoyment can be influenced and experienced by the child immediately, or *today*, whereas the primary school will only have a partial and belated influence on economic well-being, typically emerging in adulthood. Figure 1-4 identifies

when these **changes** will feasibly initially emerge as a result of the child's schooling. In the diagram each is represented as an arrow to indicate that changes are potentially ongoing beyond the point at which they emerge.

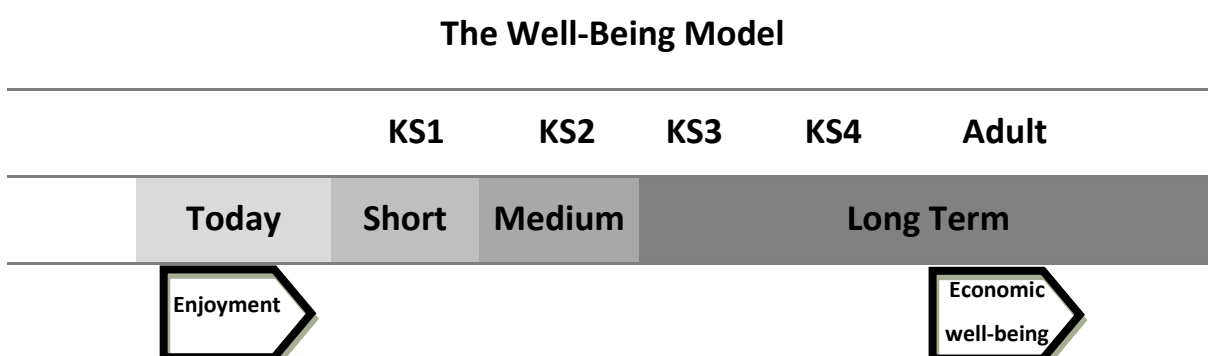


Figure 1-4 First iteration of the well-being model: Enjoyment and economic well-being compared. Developed by the author

In future, the timeline indicating the key stages in Figure 1-4 will be removed in order for the model to be read in respect to the present (*today*) and what can happen to the child's well-being subsequently. Based on the discussion presented later in Section 1.3.2, it is argued that as children get older and their characters become more formed, the timescales for effecting changes in well-being outcomes will become more protracted; this underlines the importance of primary school in addressing aspects of well-being and success at school in later years.

It is apparent that there are other essential factors which might influence enjoyment. For example, Nussbaum's Capability Model (2000) identifies the importance of engaging the senses, imagination and thought which can be considered to be mental and physical *stimulation* and contributory to enjoyment. Equally Max-Neef et al. (1989) identify needs relating to *social interaction, expression, both mental and physical, physical activity, relaxation, creation and effort* all of which may influence or be part of a child's enjoyment and more generally their well-being in the present. With these elements in place it is arguable that changes in the child's *motivation* (Schrodt, 1992) may become evident in the short term. These are included in the further development of the well-being model in Figure 1-5, indicating how the model will be added to throughout this chapter as a result of the discussion. The previous additions of enjoyment and economic well-being are shown in grey.

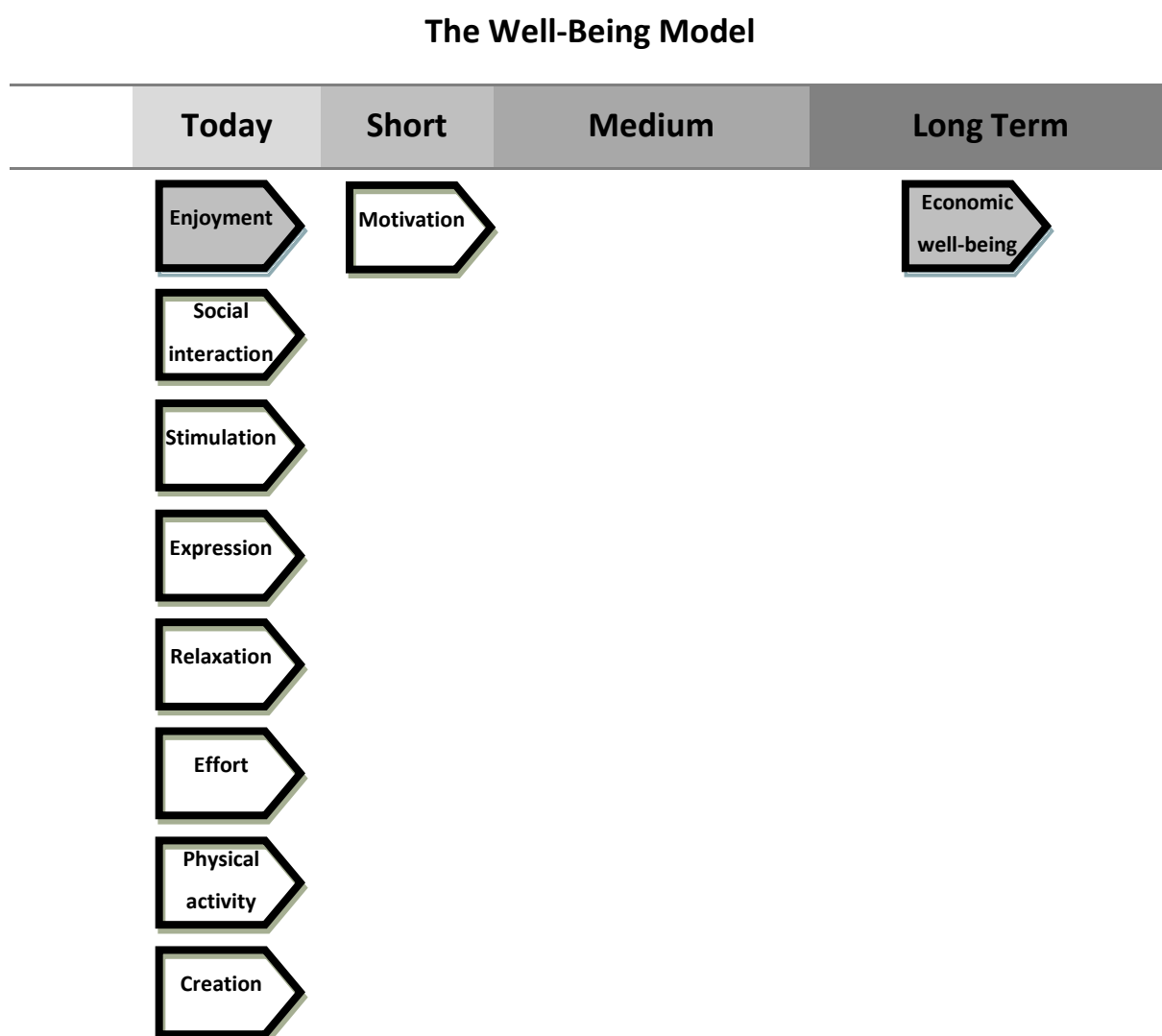


Figure 1-5 The well-being model: interpreting the *five outcomes*. Developed by the author

Remaining with the *five outcomes*, enjoyment has been described as an outcome of what is happening in the present, an explanation which can equally be applied to *staying safe*. Probably as a result of their family background children will also have an understanding of staying safe and in this way it can be seen that the scope for influencing a child's well-being is highly dependent on the child's existing experience and personality, i.e. the starting point determined by what has come before school.

Achievement can be viewed in two ways. Undoubtedly it is possible to *achieve* something in the present but, in educational terms, Cooper (2004) considers achievement to be a more sustained, repetitive entity. In this respect it is logical to describe a child's day-to-day *successes*, as they are defined by the school, which lead on to achievement in the short term. It is expected that the child's *knowledge* and *skills/attributes*, such as *creativity* or *resilience*, can also develop in the short term. In Stage 2 on page 20 the socially-reflective nature of success and achievement is

discussed which indicates that *recognition*, as described by Murray (1938), a contemporary of Maslow, also belongs in an objective model of well-being.

Positive contribution is similar to achievement because, while it can be considered in the present, as a more sustained outcome it should arguably be considered as emerging from the repeated *participation* of the child, assuming this participation is a positive experience.

Finally considering *health*, a child will enter school with a level of physical and mental health determined by their nature and nurture (Hall & Elliman, 2003). Whilst under typical circumstances it is not expected that a sustained improvement in health can occur within a day, it may be achieved in the short term, i.e. within the academic year, through physical activity, nutrition, a healthy environment in the sense of air quality, for example, and a positive psychological environment (Hall & Elliman, 2003). Taking air quality and nutrition as particular examples, these are considered basic needs which Max-Neef et al. (1989) identify as factors of subsistence. These relate to what I have described as basic, more proven (Higgins et al., 2005) considerations of design and are not shown in this model which relates to more affective aspects of well-being. (Appendix 3 describes these basics and their relationship to the overall well-being model).

Figure 1-6 on the following page illustrates how the preceding discussion can be further represented in the developing time-based well-being model. Once again previous additions are shown in grey.

Referring back to the observations of Dunne (2005), the *five outcomes* must be viewed as a simplistic examination of well-being and, as such, it can be misleading and confusing. This is particularly true because it does not entertain terms such as self-esteem and inclusion which regularly appear in the same, or related, communication of the role of schools and their design.

It is also important to note that the model is being presented as a linear progression but the components, though acting in different time periods, are contributory to one another. For example, an improvement in a child's health, shown as a short term effect, may then affect the child's sense of enjoyment which may then once again have an influence on health.

The Well-Being Model

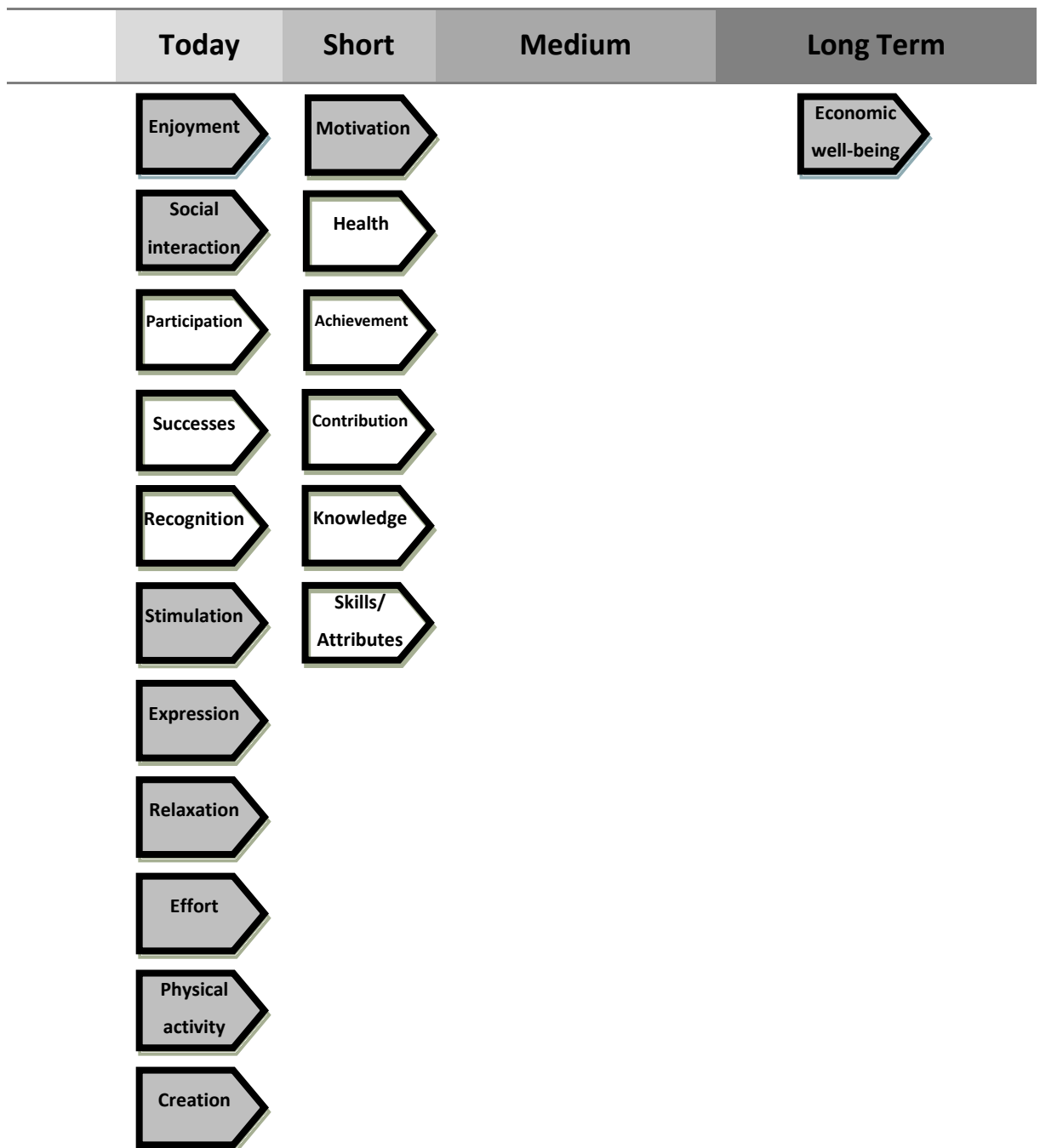


Figure 1-6 The well-being model: interpreting the *five outcomes* (Continued). Developed by author

One of the disadvantages of this type of diagrammatical representation of needs is its simplified nature necessary for communication. As an example, Maslow's hierarchy of needs (1943), referred to later in more detail, presented a model of needs in which the simplistic pyramidal schematic has become widely used and then criticised in its own right in the absence of his original discussion.

1.3.2 Stage 2: An examination of self-esteem and its school relevance

Rosenberg (1965, p.15) simply describes self-esteem as a favourable or unfavourable attitude toward the self, with Adler & Stewart (2004) adding that it represents a global sense of self-worth. Developing this, Branden (1971) claims it is 'the conviction that one is competent to live and worthy of living (p.110),' which, at a philosophical level, is arguably significant in children's overall sense of well-being.

Baumeister, Campbell, Krueger & Vohs (2003) propose that teachers and parents have focused on self-esteem based on perceived benefits which are positively linked to health (Rivas Torres & Fernandez Fernandez, 1995; Emler, 2001), and school performance, social interaction and happiness (Trautwein, Lüdtke, Köller & Baumert, 2006).

While the empirical evidence across a multiplicity of research in support has been problematical, quantitative issues arise in identifying cause and effect and isolating the influences of other factors (Maruyama, Rubin & Kingsbury, 1981; Bachman & O'Malley, 1977). In the case of self-esteem and academic achievement for example, overall Baumeister et al. (2003, p.11) indicate 'a positive but weak and ambiguous relationship.' On balance there is a link between achievement in the short term and changes to self-esteem which can be illustrated in the well-being model in Figure 1-7 at the end of this section. In addition Trautwein et al. (2006) and Skaalvik (1990) maintain that academic performance and global self-esteem are mediated by academic *self-concept* and *confidence* indicating an intermediate link between achievement, for example, and self-esteem. These are also represented in the model in Figure 1-7.

Both Mruk (2006) and Baumeister et al. (2003), while sceptical of the positivity of conclusions of available research generally accept that there is evidence to suggest people with high self-esteem tend to be more resilient and persistent, show greater initiative, and are generally happier.

This is explicitly linked to the Government's *five outcomes* and, with reference to schools, Arthur (2003) identifies that self-esteem in policy relating to children has received increasing attention based on a widely accepted premise that 'children must be made to feel good about themselves if they are to develop good conduct or virtuous behaviour (p.70),' and Mecca (1989) links self-esteem to an individual's sense of *social responsibility*. Equally, however, Arthur (2003) recognises that the widely perceived importance of self-esteem reflects the cultural trend towards the focus on the self and the individualisation of society explain why, in the personalisation and the socialisation roles of school, self-esteem is seen to be so relevant and appears so readily in discussions about schools and their design.

If design is to have an impact on children's self-esteem, as the Government would hope, the extent to which self-esteem is alterable and whether the material school can contribute is fundamental. In Stage 1 of the model, it was identified that children will enter school with certain characteristics already formed. If, for example, self-esteem is formed before school age and cannot be influenced, then neither design nor Education can have any meaningful impact. If however it continues to evolve during a child's schooling both Education and, theoretically, design can play a part.

The literature on child development generally claims that concepts of the self are not innate although Arthur does argue that the interplay between biology and the environment is still not well understood, suggesting that elements of personality, such as shyness, may have biological origins (2003). In mediation however, he cites Flannagan & Rorty's (1990) practical position which maintains that, if a characteristic is indeed alterable, then it is not important if it is also biologically derived.

Huitt (2004), contesting that self-esteem is not derived genetically, maintains that esteem is 'developed or constructed by the individual through interaction with the environment and reflecting on that interaction.' Here, Huitt refers to environment in the social as opposed to the physical sense. This position logically indicates a period in which self-esteem is formed, starting from birth.

Taylor's (1992) stance is consistent with Huitt (2004), identifying the early formation of self-esteem and its roots in the child's social context: 'The very way we walk, move, gesture, speak is shaped from the earliest moments by our awareness that we appear before others, that we stand in public space, and that this space is potentially one of respect or contempt, of pride or shame (p.15).' Similarly, Hay & Demetriou (1999) point to the beginning of awareness of others' perceptions and emotions in the child's first year of life, accelerating the development of identity and character.

From the earliest stage children's development therefore occurs with respect to what they are able to do and the effect of the responses of significant others (Harter & Whitesell, 1996). Reactions elicited by sitting, crawling, walking, and talking arguably induct the child into a culture of achievement; even at this stage the notion of achievement is dependent on the perception and judgments of others and is therefore social. Later on, at school, 'We can conclude with some confidence that there is a close relationship between people's social networks and their educational performance (Field, 2003, p.50).'

In the child's early years it is arguable that self-esteem, linked inextricably with concepts such as identity, is formed almost wholly on the basis of social interaction and the child's developing capacity for self-awareness. Piaget (1975), for example, ascribes the development of egocentric thought to the period between two and four years of age, indicating an observable level of self-awareness and subsequent character formation.

In his treatment of self-esteem, Maslow (1943) determines that it cannot exist positively without a foundation of love, affection and belongingness, security and food and shelter; aspects which are ideally provided at home to start with. In support, Emler also concludes that the individual's parents provide the strongest influence upon self-esteem (2001).

Both Sullivan (1953) and Mruk (2006) argue that self-esteem is actively maintained and the argument that self-esteem is essentially a stable entity (Adler & Stewart, 2004; Huitt, 2004), is widely accepted. This is supported by the conclusions of Trautwein et al. (2006) who suggest that measuring impacts on self-esteem may require a study period longer than the academic year; *firmly based* self-esteem as Maslow (1943) referred to it.

Despite its social and largely parental origins, school is increasingly seen as an architect of self-esteem. Arthur (2003) reflects on the societal decline in the influence of family and Church with the concurrent rise of school and the state; he remarks that the school is now seen as co-equal to the family in its character-producing role.

Although children entering school are certainly presented with new social contexts, it would appear that self-esteem is socially-derived and well advanced by the time a child reaches school age. Whether self-concepts in the short term change self-esteem in the medium term or merely regulate the effects of established and stable self-esteem, I propose that consistent ongoing self-concepts can influence self-esteem. This is illustrated in the well-being model in Figure 1-7 on the following page.

The Well-Being Model

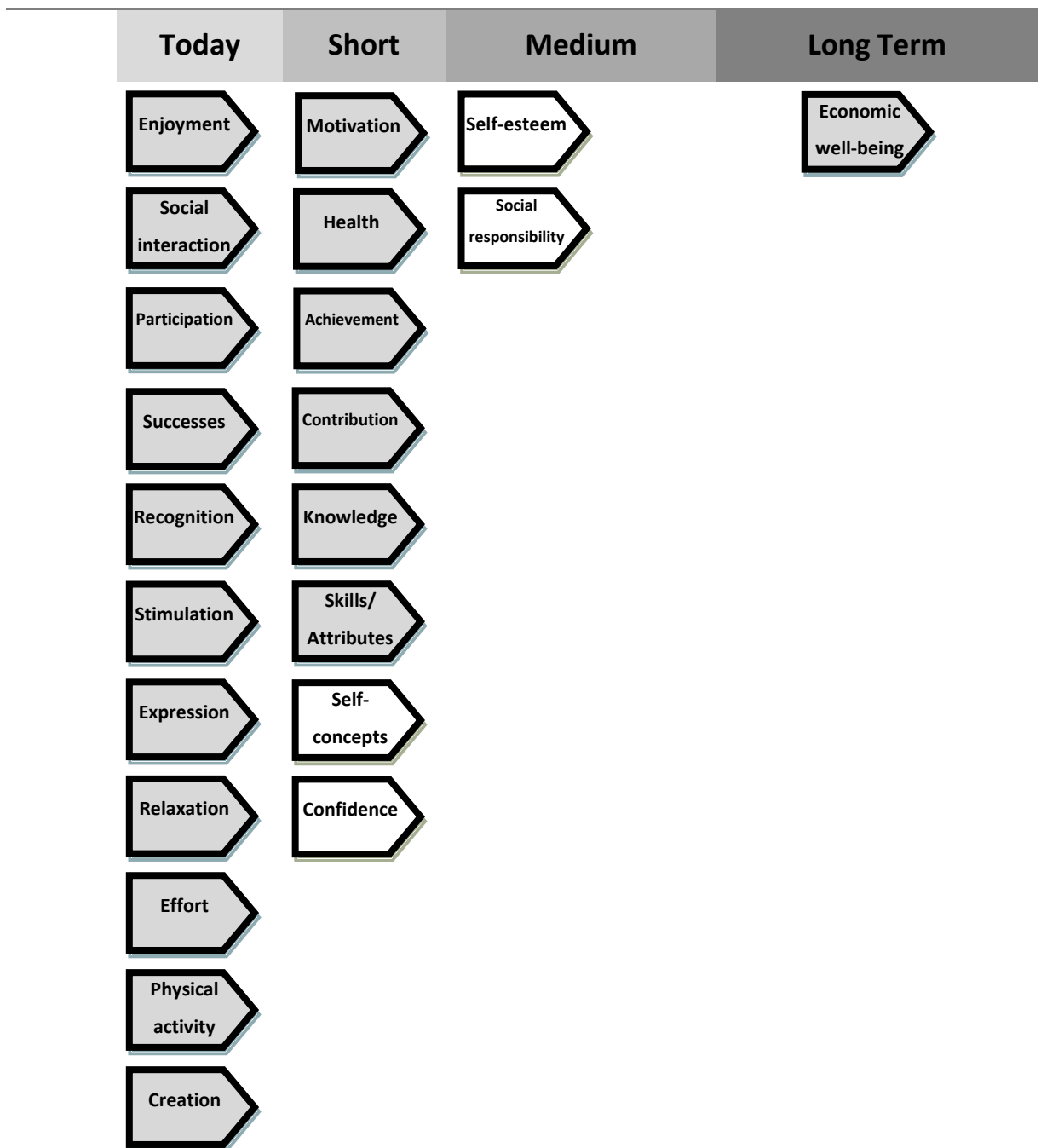


Figure 1-7 The well-being model (Continued). Developed by author

1.3.3 Stage 3: Longer term outcomes and the child's societal context

Stage 2 determined that characteristics of the self appear to be predominantly socially derived and suggested an interconnection between self-esteem and the development of identity. Identity has received considerable attention in a society which draws on diverse cultural influences and interests and, from a political standpoint, it is seen as important to direct the aspirational nature of identity towards socially cohesive ends (Beck, 1998). This indicates a feature of the school's socialisation role which includes promoting a shared identity between diverse groups and which reflects the positioning schools at the centre of the community (DfES, 2006a). It is arguable that at this point the focus of well-being naturally begins to switch from the individual to the collective as proposed in Figure 1-3 on page 11.

1.3.3.1 The relevance of identity as a desired outcome

Identity is a personal entity defined by the things an individual relates to or identifies with, some of which are more temporal than others. Woodward (2004) describes identity in a series of simple questions including 'Who am I?', 'Where do I come from?' and 'What do I want to be?' In other words, Woodward indicates that identity relates to what or whom a person identifies with both in terms of their background and their aspirations, which are both typically linked to social groups. Describing identity in this way draws a clear parallel with the description of well-being offered by Woodill et al. (1994) who refer to being, belonging and becoming and it can be maintained that a person's identity is a central component of well-being.

It is important to note that schools are in fact societies in their own right and formal and informal grouping is endemic, providing the social context of identity. The dynamics of groups and their relationship with identity have been exposed by Tajfel & Turner (1979) in their Social Identity Theory. Explicit in the theory is the interplay of types of identity including social identity and personal identity. The theory argues that a balance is sought between individual relationships and group relationships, leading to the determination of both personal identity and social identity.

Cochran (1982) makes the distinction between personal identity and social identity by referring to the *centre* and the *masks*. This mirrors the interpretation of self-concept and self-esteem and it is coherent to treat personal identity as a more protracted concept, in a similar way to self-esteem, and alterable by sustained perceptions of social identity. This difference is illustrated in the well-being model in Figure 1-8. Relevantly social identity is represented as a more fluid, setting-specific identity which is highly influenced by group dynamics. In the context of the well-being model, therefore, patterns of an individual's social identity are likely to emerge in the short term.

In support of this interpretation of identity the Social Identity Theory has concentrated significantly on strategies for gaining and maintaining a positive social identity (Hornsey, 2008) on a daily basis. It is argued that through membership and group activity, people 'strive for a positive self-concept (Tajfel & Turner, 1979, p.41),' which is considered the motivating factor, corresponding with Sullivan's (1953) suggestion that people seek to maintain stable concepts of the self. By making the link between self-concept, which arguably compensates for self-esteem, and social identity, it is possible to see Shapiro's (2000) assertion that identity, or character, can also be used for self-regulating purposes.

It is also important to note that Tajfel & Turner (1979) correctly refer to self-concept rather than self-esteem. Later work, such as Hogg & Abrams (1990), predicts that an individual's demonstration of a bias towards their own group can lead to a rise in self-esteem which again confuses self-esteem with more dynamic and immediate concepts.

Subsequent chapters will illustrate how symbolism used in schools and also the physical design of schools can influence and be influenced by notions of identity. Suffice to say here that it is arguably vital for children to identify with the school if the school is to assist the child in achieving their potential.

Figure 1-8 illustrates how the well-being model incorporates this discussion on identity. The model also reflects Cochran's (1982) argument which suggests that the personality trait which negotiates the link between social identity and personal identity is *personal responsibility*. This is shown as emerging in the short term and it is argued that this can develop into *social responsibility*, as described by Mecca (1989) in Section 1.3.2, which he allies to self-esteem in terms of the time periods of the model. Interestingly Nussbaum (2000) describes the capability of individual's to exert political and material *control* over one's environment which, I would argue is directly linked to responsibility.

The Well-Being Model

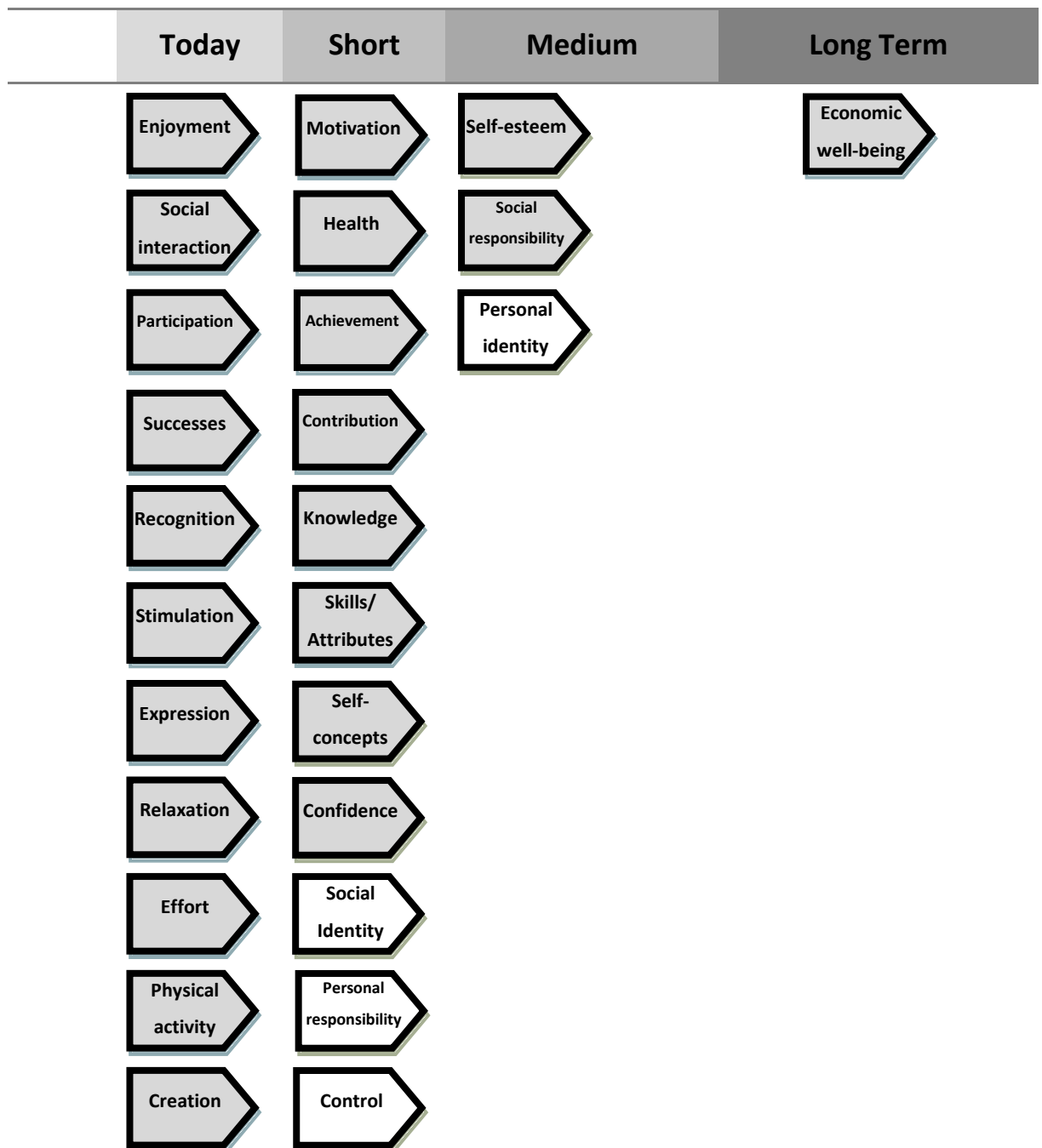


Figure 1-8 The well-being model (Continued). Developed by author

The subject of social responsibility naturally leads to a discussion of well-being and the community.

1.3.3.2 School as, and within, a community

.... learning, development, and education are so fundamentally embedded in a social matrix that they cannot be truly understood apart from that context (Goodenow, 1992, p.178).

So far the relative and socially comparative nature of well-being has been introduced. This implicates the social and cultural school as the architect of a child's self-concepts and feelings of confidence in the short term. By joining a school the child is joining a community which provides the setting for the majority of a child's social development outside of the family and, as Brewer & Gardner (2004) describe the setting for self-definition, and therefore identity:

..... individuals seek to define themselves in terms of their immersion in relationships with others and with larger collectives and derive much of their self-evaluation from such social entities (p.66).

At a primary school age I would suggest that this is highly determining for the child.

As notions of well-being extend beyond the individual, there tends to be a shift in focus from psychology to sociology and economics. Max-Neef et al. (1989), an economist and environmentalist, was interested in communities and their cumulative effect on the individuals of whom they comprise. His interests stemmed from the economic and social crisis in Latin America in the 1970s and 1980s, in which many believed the perceived wisdom about how communities and individuals flourish was failing.

Max-Neef brought together experts in a number of fields to propose a new philosophy of development called *The Human Scale Development Model* which reconsidered basic human needs, their structure, and interrelationship in the context of community.

His approach was fundamentally different from Maslow's (1943). Where Maslow described the needs of individuals, Max-Neef et al. (1989) described individuals as part of, and the product of, broader communities; aspects such as self-esteem, for example, he argues are derived firstly at a cultural/community level. This reflects the views of Durkheim (1956) and Vygotsky (1978), who argued the psychological determination of individuals by cultures and institutions like schools which the discussion on child-centred schools alluded to. In this view the culture shapes the individual from the very beginning of their lives and Vygotsky (1978) pointed out the role of language in this process. Although Stage 1 of the well-being model began with an individualistic

view, considering the *five outcomes*, the parameters of what is possible for that individual appear to be defined at a higher, collective level.

White (2005) supports the community rather than the individual approach. He proposes an end to the individualistic framework of well-being by asserting that ‘individuals are not the final authority on their flourishing (p.106)’ but should be guided by collective wisdom that has created a common value system over time. He suggests that education should lead children to a more ‘philosophically and historically informed set whose rationale is fully stated (p.106).’

Max-Neef et al. (1989) also rejected the notion of a hierarchy of needs beyond the fundamental need for subsistence, or staying alive, involving food and shelter. Their model is based on simultaneous, complementary needs and trade-offs rather than a hierarchy. The crux of this model resides in the assertion that fundamental human needs are ‘finite, few, and classifiable’ and are consistent across cultures and time. The difference, Max-Neef et al. claim, is in the way these needs are satisfied and, they argue, ‘one of the aspects that define a culture is its choice of satisfiers (p.21).’ If fundamental human needs are consistent across cultures it is reasonable to conclude that the model of needs can be applied at different levels of community, including schools. Schools, in their central position within the community, are arguably highly representative of that community’s culture and demographic. This is discussed further in Chapter 3.

The Human Scale Development model is consistent with the well-being model being developed within this chapter in the sense that it presents a culturally-detached, or objective, framework; the choice of satisfiers of Max-Neef et al.’s model would, in the school context, symbolise the subjective school in terms of culture and curricula, for example. Reflecting on their work offers the opportunity to consider individuals within the broader school community and also to consider the Government’s motivation to link individual well-being to that of local communities and also in relation to national objectives. Unlike Max-Neef et al. and Maslow (1943), the well-being model being developed here importantly reflects time.

By definition, Max-Neef et al. (1989) described the interaction of *existential* needs of being, having, doing, and interacting and *axiological*, or value-related, needs of subsistence, protection, affection, understanding, participation, idleness (leisure), creation, identity and freedom. Some are more speedily achievable than others: *participation* and *freedom* would appear to be in different timeframes when considered in relation to the well-being model, with freedom closely related to identity. It is also possible to draw parallels with the well-being model and some of the

basic needs; for example *staying safe* falls within Max-Neef et al.'s definition of protection whereas *contribution* and *participation*, I propose, may be considered to be broadly synonymous in their intended meaning.

The differentiation between needs and satisfiers is important. For example, self-esteem is presented as a satisfier of the needs for identity and freedom rather than an outcome in its own right. However, by incorporating elements of Max-Neef et al.'s theory into the well-being model, it becomes clear that the well-being model comprises a mixture of needs and satisfiers and that needs may in turn become satisfiers, which they did not acknowledge. The time-phased approach of the well-being model helps to reveal this and exposes the absence of *becoming*, as described by Woodill et al. (1994) and Royo (2007) as an existential need. Therefore although Max-Neef et al. (1989) rejected the concept of hierarchy, the distinctions made to comply with a diagrammatical matrix are somewhat arbitrary.

However, referring to the well-being model, there are logical additions. *Respect*, *trust* and *understanding* are placed as short term outcomes because, arguably, changes to them will take time to emerge. The well-being model also incorporates the arguments of both Max-Neef et al. (1989) and Maslow (1943) which indicate that positive daily social interaction characterised by privacy, intimacy, togetherness, cooperation and sharing, for example, can lead to *positive relationships*, including *friendships*, in the short term. Considering *affection*, as another example, this is a need which Max-Neef et al. (1989) consider to be borne out of positive relationships and therefore is not immediately achievable. It will also be shown here therefore as a short term outcome.

Figure 1-9 on the following page illustrates an updated model of well-being based on the preceding discussion.

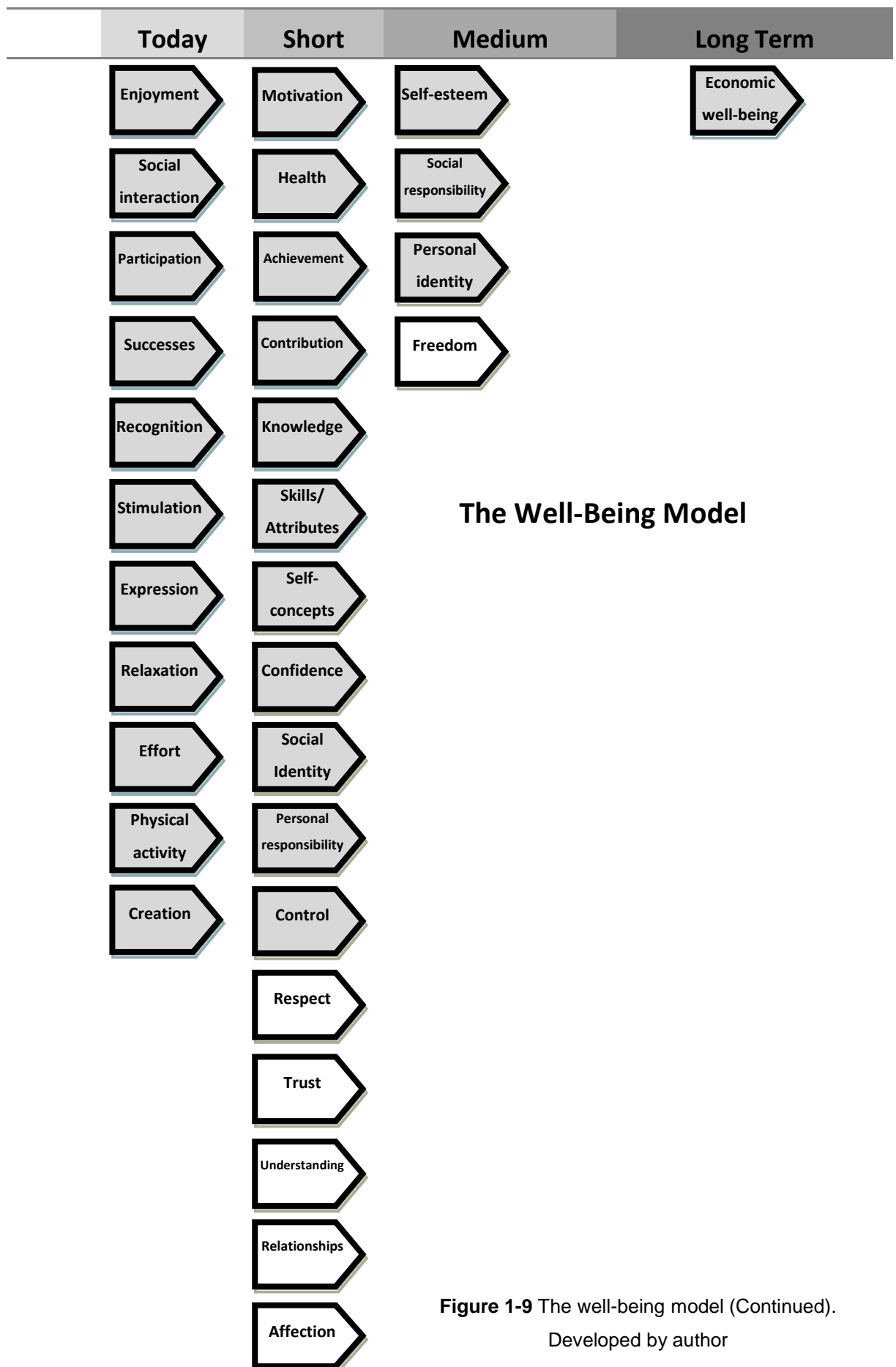


Figure 1-9 The well-being model (Continued).
Developed by author

1.3.3.3 Social capital and further national objectives

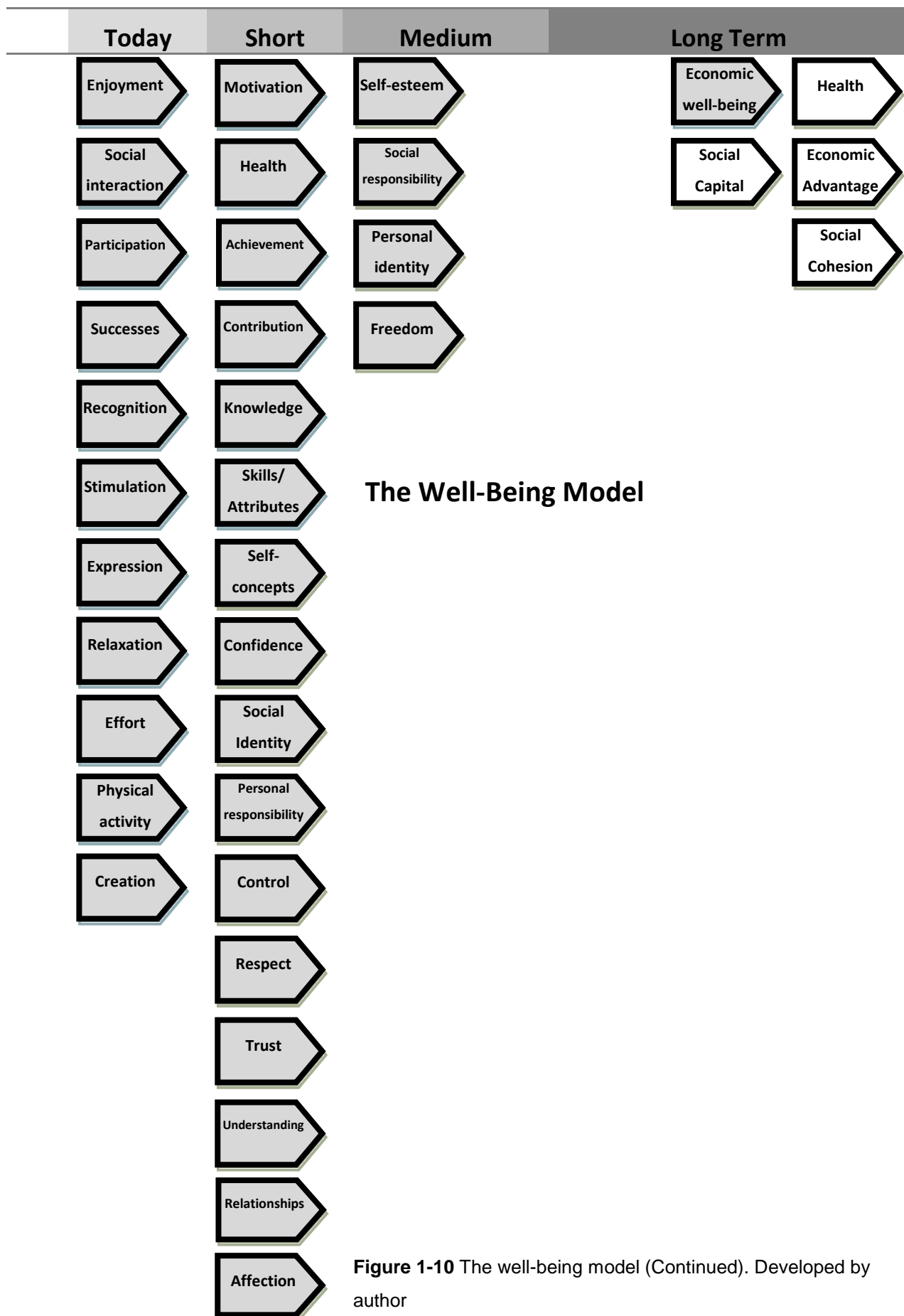
Referring to the discussion so far it is important to see the socialisation role of schools emerging as central to, or rather shaping of, the individual's well-being. It is seen as essential for the school to assist children in becoming responsible citizens, functioning within the social and cultural norms of society without overly inhibiting their individualism, as Figure 1-3 on page 11 described. Considering the child's potential social and economic contribution, at primary school level, this can be argued to be fundamentally about nurturing acceptable social behaviour and attainment, as it is defined.

Max-Neef et al. (1989) were eager to view individuals as part of a wider culture or community and it is possible to see how the well-being model can begin to reveal community-wide and even nationwide considerations of well-being. One element which has been defined and investigated by Putnam, Bordieu, and Coleman is *social capital*, shown within the well-being model in Figure 1-10.

McGonigal, Doherty, Allan, Mills, Catts, Redford, McDonald, Mott & Buckley (2007) describe the work of Putnam, Bordieu, and Coleman and investigate social capital in the context of schools. They identify that social capital, or the metaphorical value of social networks, is an area of great interest for schools. For example, West-Burnham (2008) defines a community with high social capital as having shared social norms and values, sophisticated social networks, trust, civic engagement, symbols and rituals, interdependence and reciprocity, volunteering and community action, shared hope and aspiration.

This definition is highly reflective of how the well-being model is emerging from the preceding discussion and relates significantly to benefits of social responsibility and identity. As Martin (2005) describes governments are naturally interested because of the potential benefits which ally social capital with a collective view of self-esteem.

The reason why social capital has been attracting attention is because it brings enormous tangible benefits to society. Researchers have been uncovering more and more evidence of links between social capital and desirable out-comes in terms of economic growth, crime, health and education. Among other things, citizens with good networks of relationships have fewer mental problems, recover faster from illness, smoke less and live longer. They are also less likely to commit crime or to be the victim of crime. A society rich in social capital should therefore be better off in many ways, not least because it should need to spend less money on hospitals, prisons and antidepressant drugs (Martin, 2005, p.87).



McGonigal et al. (2007) identify the importance of trust and reciprocity which necessitates the school to make an 'investment in certain forms of behaviour (p.80)'. In the well-being model I have described how positive interaction can lead to rewarding relationships, trust, respect and cooperation. These can be considered, therefore, fundamental elements of the development of social capital and the skills which an individual develops in order to utilise social capital.

Even beyond the formation of social capital one can see the longer term national objectives of *economic advantage*, *social cohesion* and *health* which return to some of the motivations for promoting self-esteem but from a more holistic and a rather less populist viewpoint.

1.3.4 Review

The development of a well-being model stemmed from the confusion surrounding the terminology used in the design briefs and communication associated with the new school building programmes. It was also evident that what was being communicated to architects and designers arguably focused on an aspirational vision for learning and not one which appreciated the broader social reality of schools; this reality is predicted to be the source of much of the frustration related to school design and which subsequent chapters will reveal.

In seeking clarification, the inclusion of misused terms such as self-esteem and identity, for example, does however appear to be consistent with child-centred schools, which Section 1.2 concluded are concerned with children's well-being. However what the well-being model reveals without attempting to quantify is that well-being is highly complex and comprises many interrelated elements which can be both causes and effects, or needs and satisfiers in Max-Neef et al.'s (1989) terminology. In these circumstances, quantitative research which pursues categorical evidence would appear to be ill-advised.

The well-being model also indicates that much of the terminology used may be relevant to a child's overall well-being but is largely irrelevant as an objective in a design brief, beyond perhaps an introductory, visionary sentence to provide context. I have argued that a child's interaction with the physical school is existential and so will largely relate to the present whereas many of these affective aspirations have been illustrated to be longer term, more stable outcomes. To influence them requires an understanding of what is happening more immediately in a child's school life but, even with such focus, it is predicted that it will be difficult to credibly claim that design has made a contribution. Figure 1-11 shows the daily elements which design can directly influence and which can ultimately, although indirectly, contribute to the longer term aspirations of the new schools, like self-esteem or health.

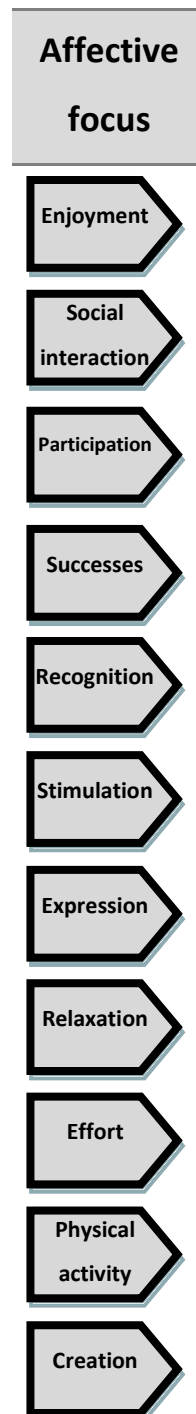


Figure 1-11 Contributors to well-being in the present: a focus for affective school design.
Developed by author

By implication, it is also predicted therefore that any attempt to design for an outcome which is beyond the day-to-day experience of the child will be fundamentally flawed and contrived unless it is already supported by the school culture. Furniture which claims to promote creativity, as referred to in the Introduction, is a good example of how design can overstate its potential, ignoring the many human factors which are dominant in school. A school building frontage which claims to promote self-esteem is equally, therefore, manufactured (DfES, 2003b).

1.4 Summary

This Chapter has introduced the ambitions for the new schools being designed and built as part of the Primary Capital Programme. Contained within these objectives is a raft of significant terminology, such as self-esteem, well-being and identity, which becomes highly nebulous when it appears in a school design brief. I have advocated that the terminology sits under a general banner of child-centred schools and has theoretical merit yet it is not well understood in the practical context of Education, or indeed the design which supports it.

Whilst this endorses the intention of the current school design programme, it does, however, highlight a dramatic disconnection between these intentions and the first new schools appearing; it is unsurprising that these objectives are being superseded by fairly ordinary and traditional approaches to the design of schools, as CAGE reports (2006), which are more tangible. Both CAGE and BCSE warn of designing new *old* schools and consequently delaying the transformation of the lamented form of schools for another 35 years or more (Dudek, 2000).

I have contested that the child-centred school is much more complex than solely a consideration of the child's learning and achievement. Evidence suggests that effective learning is predicated by a wider context and this chapter broadly concludes that the objective of a child-centred school is to promote a child's well-being, which is essentially socially-constructed.

By asserting what child-centred means in today's context and through the development of the well-being model, the chapter has been able to isolate what constitutes a realistic expectation of the design community and areas which can influence longer term affective objectives, although not directly. Equally, the well-being model reveals the narrowness of communication relating to the design of schools which largely reflects one aspect of school, the pursuit of the personalisation of learning. This means that: 1. what is currently being asked for is unrealistic and, 2. the scope of what is currently being asked for is simplistic.

Furthermore, while there is some merit in keeping design objectives simple, I argue that concurrently the Government is setting out a wider agenda for Education which clearly reflects overriding motivations of citizenship. It is possible that design is seen as an aspirational practice, evident even in the design of institutions like prisons for example (James, 2006), which might be inhibited by the full picture. Unfortunately it is likely that the elements of a school's role which are being overlooked are the ones which are tying design to a traditional form, discussed further in Chapter 2.

In fact the dual role of Education which has traditionally been to both develop the individual child and to socialise them, on inspection, illustrates the individual as arguably a minor concern. Socialising a child, particularly at primary level, relates to teaching social and cultural norms and encouraging behaviour which is deemed to be acceptable, consistent with perspectives on social capital which are considered beyond the individual (Putnam, 2000). This endorses Max-Neef et al.'s (1989) view that aspects such as self-esteem are determined first at a socio-cultural level and presents a very different picture of a child-centred school from the romantic musings of Rousseau's *Emile* (2004). Attempting to differentiate between natural versus culturally defined learning and achievement, or well-being more generally, is ineffectual in this respect.

The role of mainstream Education and its curriculum is also conceived to lead to the greatest national prosperity, as evidenced by the pursuit of creativity for example. While a child may be encouraged to direct their own learning this must be seen within the parameters of imposed interests and judgments made on behalf of that child. Despite the rhetoric, I suggest that children continue to be considered predominantly as a homogenous group in which the term child-centred becomes subjective and therefore an eternally debatable term. Well-being must therefore also be considered as largely subjective and arguably directed for the child, reflecting the culture and social aspects of the school. These in turn reflect societal and economic demands on Education.

The well-being model does offer a degree of objectivity with which to then evaluate how society and schools direct well-being, forming the discussion of subsequent chapters with particular interest in how this relates to children's interaction in physical spaces and objects.

1.4.1 Assessment of related research methodologies

Delivering mainstream, state, child-centred schools has proved a frustration for many years, physically and pedagogically (Egan, 2002), and, as explained by the consultants Price Waterhouse Coopers (2007), has not been assisted greatly by research. As a consequence, Higgins et al. (2005) indicate that design has been proven to do little more than accommodate Education.

While Nair & Fielding (2005) recognise schools to be complex social institutions efforts to establish the link between children's outcomes and school design have tended to focus on the minutiae of a child's life at school, such as the impact of wall colour on errors (Bross & Jackson, 1981) or learning behaviour and chair ergonomics (Knight & Noyes, 1999).

From a research perspective, as the well-being model alludes, the quantitative study of the particular elements of well-being is problematical; establishing the relationship between

enjoyment and self-esteem or respect and social capital, I propose, is too isolated and dependent on many other factors. Although Higgins et al. (2005) note there is a general consensus that the renewal of schools leads to better attitudes, morale and behaviour, the verdict is that schools are too complex, corresponding with Nair & Fielding's (2005, p.7) appraisal: 'the obvious interconnectedness' and 'the fact that the interconnectedness is nonlinear. That means it is nearly impossible to identify simple cause-and-effect relationships.'

In order to measure the impact of physical spaces and design on children, research has arguably attempted to simplify the relationships which affect a child's experience and feelings at school; trying to isolate the particular contribution of design by investigating direct links to concentration, for example, compounds such contradiction whilst underestimating the potential subtlety of children's interaction. On the other hand, the qualitative research of Clark (2005), for example, reinforces the aspirational nature of design by not fully engaging with the cultural implications of children's responses. In general qualitative research has proved too superficial and quantitative research too specific. Thus both Higgins et al. (2005) and PWC (2007) determine that, overall, research has failed to add any real value to a more affective design process in schools.

Furthermore, it is also arguable that the research, evidenced by Price Waterhouse Coopers (2007), consultants used by the Government, has prevaricated over achievement as a measure because it is most easily captured; based on the well-being model, this marginalises the concept of child-centred schools and well-being, and moreover betrays an underlying league table motive.

Learning from this, the research presented in this thesis does not set out to offer categorical proofs; rather it seeks common patterns and themes in children's complex well-being. The research will also seek to reveal whether the complexity illustrated in the well-being model is exacerbated or simplified by the social and cultural subjectivity which schools overlay upon it.

1.4.2 Methodology

The research question, articulated on page 1, refers to the study of children's relationships with their physical school environment and therefore, from the outset, the meaningful participation of children has been deemed an essential element of the research undertaken. Representing a popularly held view (Clark, 2002; Heppell et al., 2004), Burke & Grosvenor (2003) argue the importance of hearing the child's voice in the design process and Killeen, Evans, & Danko (2003) claim the motivational benefits of involving children in the creation of their environment. Nevertheless, on balance, the effective involvement of children in guiding the design of schools which will potentially accommodate their own children is unclear.

As a consequence, an exploratory study was carried out to identify a relevant territory, both of scope and methodology, for the thesis. The Birmingham primary school study took place at the very beginning of the research period and included observation and unstructured interviews with children leading to design experiments within their classroom learning environments. Above all this study prompted the literature-based discussion of well-being and pointed strongly towards the influence of school culture and society as fundamental factors affecting design and its use. Furthermore, the historical perspective presented later in Chapter 2 was also significantly steered by the questions the study raised.

Referring to the subsequent choice of methodology, a central conclusion of the discussion of well-being and its associated model is that well-being is complex and broadly benefits from a holistic study rather than a specific study of its elements and their interrelationship. Consequently, this thesis presents qualitative research employed to investigate children's *perspectives* on well-being, i.e. the subjectivity affecting the model, by considering the triangular relationship between children, their physical school environment and primary school culture. Despite its ethnographic interest in culture and the application of aspects of phenomenology, it is most closely allied to a grounded research methodology, a method originally illustrated by Glaser & Strauss (1967) in which research begins without hypotheses and proceeds to investigate emergent themes.

Nevertheless, the previous section referred to shortcomings of qualitative research in this field which may, for example, rightly pinpoint children's need for social spaces yet the findings do not fully consider this with respect to the nature of Education. While the research methods presented in Chapters 3 and 4 are directly informed by the work of Clark (2005) and Care & Chiles (2006), the findings are then used to inform more detailed study in which the more subtle, subconscious aspects of children's relationships with physical spaces are investigated. The combination of techniques presented in Chapter 5 and 6 also distinguish this research from others in the field, applying a low level of quantified measurement and therefore bridging to some extent the gap between qualitative and quantitative methodologies identified earlier.

In total, over 300 children were included in the primary research. Besides the school in Birmingham two other state primary schools in Southampton and a village close to Andover were involved. These two schools provided the setting for the research which forms the core of this thesis with 104 children taking part. By agreement with the respective headteachers, studies were carried out with Year 1 and Year 5 children, also including Year 2 and Year 6 children if the classes comprised mixed age groups. The age groups were chosen to cover both younger and older

children in order to compare children of different ages and to assess the effect of increasing familiarity with school and its purpose.

Consistent with the grounded and phenomenological tradition is a smaller sample size in which more in-depth study can take place by spending a much greater amount of time with children and also spending extended time reflecting on their individual contribution. Furthermore a greater variety of methods can also be applied beyond the limitations of anonymous questionnaires which larger sample sizes typically necessitate; Cohen et al. (2000) note that smaller sample sizes are expected for qualitative research. Consistent with its sample and approach, this thesis has not intended to present statistically proven theories applicable to all schools but rather to offer rich insight into a group of children in their physical school setting which can then be evaluated in other schools.

Any ethical issues relating to conducting the research are discussed in the relevant chapters but, overall, the objectives and methodology applied were approved by the Buckinghamshire New University Ethics Committee in March 2007.

A notable limitation of the research derives from the class populations which governed the findings. While gender and age proved to be valid areas upon which to base conclusions, ethnicity and disability, for example, were not.

1.4.2.1 Chapter 3 and Chapter 4

In the tradition of phenomenology, which Cohen, Manion & Morrison (2000, p.23) describe as advocating 'the study of direct experience taken at face value,' Chapters 3 and 4 *bracket*, or suspend, the discussion of this chapter and Chapter 2, to investigate these children's perceptions of well-being at *face value*. Chapter 4 goes on to study children's conscious feelings and relationships with physical spaces, the content of which was only loosely guided. In this way the findings are deliberately grounded in the research, as advocated by Glaser & Strauss (1967).

Specifically, the primary research applies *content analysis*, which Krippendorff (2004, p.xvii) describes as analysis 'of the manifest and latent content of a body of communicated material through classification, tabulation and evaluation of its key symbols and themes in order to ascertain its meaning and probable effect.' Noting also Krippendorff's concerns about how different media can channel responses, Chapter 3 and Chapter 4 use and critique a variety of methods including writing and drawing designed to elicit children's thoughts, as advocated by

Robinson (1994). Variety of method is also endorsed by Clark (2005) in what she refers to as a *mosaic* approach.

1.4.2.2 Chapter 5 and Chapter 6

By identifying key themes, the research identifies the dominant component of children's relationships with physical aspects of school to lie in associations made between these places or objects and perceptions of behaviour, ability/achievement and relationships with peers and adults, in particular the teacher. Further discussion of the well-being model in Chapter 4 offers *belonging* as a measure of this associative relationship and signals the start of the partially quantitative analysis contained in Chapters 5 and 6.

Chapter 5 describes an ethnographic technique, photo elicitation, which is applied to gauge children's positive or negative identification with images of physical features of the school. These individual responses are then used cumulatively as an overall measure of belonging. Harper (2002) describes photo elicitation as a highly effective method for interrogating the subconscious, responding to limitations of investigating children's conscious thoughts presented in Chapters 3 and 4. Children's responses are then mapped against the key themes which emerge from earlier chapters and which corroborate largely with Chapter 2. These include children's ratings of their own ability, behaviour and happiness and of their class social context using a social network analysis (Wasserman & Faust, 1994). What this means is that responses to a chimney or a library bookshelf can be compared for children who are less popular, or for those who believe they are of high ability, or perhaps those whom the teacher perceives as behaving poorly.

Care is observed in this analysis to respect the limitations of the small sample size and to be mindful of the shortcomings, identified by Cohen et al. (2000), of Likert scales in relation to statistical methods. Instead limited quantitative analysis is applied judiciously in order to identify patterns of responses helping to establish a picture (Byrne, 2001) of children's experience at school and how this relates to the physical school.

Importantly, anecdotal evidence is also gathered to corroborate findings, or to indicate any mismatch between conscious responses from earlier chapters and the less conscious responses presented in Chapter 5 and 6. *Discourse analysis* is applied in which children's conversations about their physical school are evaluated in relation to the social and cultural context of the school, as proposed by Coyle (1995).

1.4.2.3 Supplementary research

Other research was also carried out alongside the core research described. This included over 20 hours of filming of learning situations to observe children's dynamic interaction with the physical space. Additionally design experiments were completed in which classroom furniture was introduced or removed. In both School A and S the whole school took part in a handheld keypad voting study in which children voted for images of different animals that best represented characteristics of the school culture they would like. This information was used for children to design a character used for communication in school, testing concepts of identity and children's voice in school affairs. More generally many hours of unstructured interviews with each of the children were carried out individually. While these pieces of research were deemed peripheral to the main direction of the thesis, at certain points they are referred in support of key ideas.

1.4.2.4 School Profiles

A profile of each school including a description of their physical environment is provided in Appendix 4. Due to the personal nature of the research highlighting such things as the popularity of individuals and the way in which children are perceived by teachers, the anonymity of the children and the schools are preserved, referring to them as School B (Birmingham), School S (Southampton), and School A (Andover).

1.4.3 Thesis structure

This thesis is structured as follows:

- Chapter 1. Evaluates the meaning of child-centred schools and, by developing a model of well-being, appraises the theoretical contribution of design;
- Chapter 2. Reviews the reality of school design from a historical perspective, evaluating the successes and failings of child-centred schools and the role of architects in leading these developments. Parallels are drawn with today's school design;
- Chapter 3. Presents primary research in School S and School A to introduce children's perspectives on their own well-being;
- Chapter 4. Presents children's conscious views of aspects of the physical school and how they relate to them. The chapter concludes by introducing the concept of belonging as a development of the well-being model and a signifier of inclusion and the potential for longer term outcomes to be achieved;

- Chapter 5. Presents an investigation of belonging in relation to the social, cultural and physical context of children's school. The findings are evaluated to propose critical areas in which design can contribute to well-being;
- Chapter 6. Investigates the detail of the belonging studies to assess how individual physical elements of the school relate to well-being from the point of view of inclusion;
- Chapter 7. Presents a discussion of the thesis findings and proposes an alternative approach to primary school design.

Chapter 2: The design of schools - A perspective on history

Mass education originally mirrored society's view that its main role was to control and discipline children in order to create pliant citizens who would fit into the new industrialized world; in short fodder for mass production (Dudek, 2005, p.30).

2.1 Introduction

Chapter 1 introduced the complexities of the current design debate and concluded that, conceptually, designing schools to support well-being is a worthy objective. Despite a lack of understanding and misuse of terms, Woolner, Hall, Wall, Higgins, Blake & McCaughey (2005) describe the belief in the architectural community and the current Government that the physical environment of the school can assist positive long term outcomes. Based on the well-being model, this would seem to be theoretically valid. However, the expression of more transformative goals in design briefs, as Chapter 1 identified, is not clear, is dependent on many other factors, and does not assist their realisation in the final design. As a result the previous chapter concluded that design should generally focus on objectives which directly influence the child's day-to-day social experience, of which learning is part.

However, while Chapter 1 endeavoured to clarify the discussion by isolating Design's contribution, in practice it was argued that Design's approach is narrow and an appreciation of the social and cultural influences affecting schools and directing children's well-being is required.

Heppell et al. (2004) proposed that there is a lack of knowledge about transformative school design arguing that 'we cannot easily evaluate alternatives because we haven't built any, or at least not many (p.31).' Based on the discussion in Chapter 1 this is predicted to indicate a tendency to view school design in isolation of Education in a wider sense. Therefore, while embarking on a new century and, indeed, a new millennium tends to focus the mind forwards it is surely important to understand this context with respect to the pursuit of child-centred schools; a pursuit which is far from new, as Nicholson (2005) observes.

Despite bemoaning the limited transformational qualities of the new schools being built, it would appear that the Government and associated bodies such as CABE and RIBA are not especially keen to understand why a perpetuation of design is occurring. In this thesis it is argued that, rather than ignoring and even condemning the past, an appraisal of the historical context and legacy of

school design will assist in understanding current frustrations and is more likely to suggest a potential way forward.

The purpose of this Chapter therefore is to appraise the historical form of schools highlighting how evolving conceptions of child-centred schools have determined the physical space, its contents and its use. This provides the prospect, with the benefit of hindsight, to reflect on an important practical relationship between design intention and use in which a gap may reflect poor design but moreover it is expected to reveal the overlaying of a culture and evidence of the pervasive nature of socialisation, the economy and a results-based culture. It is anticipated that an assessment of what can be regarded as the subjective school will indicate areas of the well-being model to which a child's sense of well-being is directed.

This appraisal of the historical development of schools begins in 1870. Weiner (1994) argues that the advent of compulsory education as a result of the Elementary Education Act 1870 has had a lasting influence on the form of Education ever since.

A historical review also provides the opportunity to assess the role of architecture in assisting the development and focus of child-centred schools. It would be easy to conclude from the literature that school design is a question of architecture. However, the contribution of architecture beyond buildings with adequate daylighting and ventilation, as Higgins et al. (2005) advise, is uncertain and, with an enduring form and limited inroads into child-centred objectives, this requires evaluation.

2.1.1 1870-1902 - Victorian Board schools

2.1.1.1 Intentions

The 1870 Elementary Education Act, for the first time, required all children between the ages of five and thirteen to attend school (Dixon & Muthesius, 1978). Weiner (1994) identifies several factors which led to the political move to compulsory education including the perceived decline in British manufacturing power and unfavourable comparisons with other, particularly, Germanic nations. In addition, as a result of the various Factory Acts, which restricted the employment of children, it was felt necessary to provide an alternative activity for children (Birchenough, 2008). Moreover, in 1867 the Reform Act substantially increased the number of working class men who could vote (Weiner, 1994) and while there was significant fear of a powerful, educated working class others, like the industrialist Robert Lowe, believed that 'the lower classes ought to be educated to discharge the duties cast upon them (Rubenstein, 1969, p.5).' In fact, Weiner (1994)

indicates the perception at the time that Education held the key to several pressing economic and social issues, noting a 'sense of urgency, near panic ...' and highlighting the words of W E Forster who identified the social threat to the nation of 'invading armies of ignorance, misery and destitution (1994, p.22&23).'

It is possible to see why Dudek (2000) identifies Education as a tool for controlling and using the masses for various ends and clearly children in state Education were considered as a homogenous group as opposed to individuals. Equally, however, the need for a basic education of literacy and numeracy, known as the Three Rs, meant that there was no reason to differentiate between children and many, like Weiner (1994), saw the Victorian Board Schools as a major step forwards for democracy and equality.

2.1.1.2 Design, use and well-being

The 1870 Act, resulted in a 'boom' in school building (Institute of Education, 2007, p.1). In 1874 Robson, the first architect of the London School Board, published *School Architecture* (1877) which, on behalf of the London School Board, presented a blueprint for school building design and would go on to characterise the programme.

Despite claims which identify Robson as the 'first designer to marry educational theory to architectural practice in any meaningful way (Dudek, 2000, p.15),' the Institute of Education (2007) argues that 'designs were based more upon social and economic demands than educational theory (p.1).' Certainly, from the discussion so far seeing these motivations separately would seem to be simplistic and yet, arguably, endemic in the literature.

The school boards were faced with a pressing need for the accommodation of a group of the population which had not previously received any formal education; Dudek (2000) claims this manifested itself in concerns of control, discipline and accommodation rather than of education. Control was clearly evident in the designs including, for example, the separation of boys and girls and the bolted down benches (Seaborne & Lowe, 1977). Reference is made by Dixon & Muthesius (1978) to the number of storeys required to house the increasing numbers of pupils, particularly in urban locations where ground space was limited; five storeys in Endell Street School in London allowed for one thousand five hundred pupils to be schooled. Consequently many of the schools representing the era were high and dominant buildings which were, conveniently maybe, consistent with the aesthetic intention of design identified by Seaborne & Lowe (1977) in that era.

2.1.1.2.1 The look of the school building

Architecture, by nature, deals with an external and an internal impact and today one can see a government keen to stress the importance of this aesthetic dimension in school design; the exemplar design brief makes a direct correlation between the exterior of the school and children's aspirations, inspiration, motivation and self-esteem (DfES, 2003b). In referring to aesthetics, throughout, this thesis identifies with Pye's (1995) observation of 'doing useless work on useful things' which, if we did not do, 'our life indeed would be poor, nasty and brutish (p.13).'

In today's context it is widely held that the outward appearance and entrance to a school powerfully suggest what one might expect to encounter within and strongly influence a lasting impression of the place. Walters & Cohen (2003) note this to be a signifier of the 'tone and ethos' of the school. The Government maintains that 'the presence or absence of enthusiasm for and opportunities for learning can be sub-consciously 'read' in the frontage, the foyer ...(DfES, 2003b, p.4).'

This is consistent with architectural beliefs in the Victorian era.

The Victorian Board schools were considered 'highly fashionable' (Dixon & Muthesius, 1978, p.239) and, through the architecture, Seaborne & Lowe (1977) recognise that it was their intention to impress both the children and the community. In fact the architecture, whether Gothic or Queen Ann, the common styles, was seen as compensation for the dreariness of children's homes; it was felt that 'school building should contribute to the aesthetic sensibility of the child by showing him standards beyond those of his own home (Seaborne & Lowe, 1977, p.4).'

External dominance, therefore, was in keeping with the intended impact of the buildings and the messages they were to convey reflected the language of aspiration, inspiration and contemporary design: 'frequently building in slums, Robson and the board were determined that these schools' and 'their elevations, with fancy gables, colourful brickwork, and terracotta ornamentation ... should impress their young users and their families (Dixon & Muthesius, 1978, p.239).'

Similarly in Birmingham, as noted in the Pall Mall Gazette in 1896, '... you may generally recognise a Board school by it being the best building in the neighbourhood (Seaborne & Lowe, 1977, p.10).'

Accordingly, therefore, there was a deliberate use of aesthetics and symbolism to inspire children and their parents which, could both attract children to the building but also engender a sense of respect to a higher authority.

Significant also was the influence of the church. The school building period was signified, in London at least, by a conscious shift away from explicit religious influence in Education, which was

clearly illustrated in the architecture; Seaborne (1971, p.221) suggests schools, at the time, were second only to churches 'as a means of spreading religious views among the rapidly growing population,' yet Gould (2006) describes Bonner Street Primary School in Bethnal Green as a distinctive and consciously secular Queen Anne style. This is illustrated in Figure 2-1.



Figure 2-1 Bonner Street primary school, Tower Hamlets, London. Photograph: Graham Turner.
Source: Weaver (2006)

Whether or not the Victorian Board schools did manage to inspire and raise aspirations, the perception that the exterior school can have this effect endures today. O’Gormon (1998) refers to Vitruvius who deemed that a building must be judged in relation to function, structure and beauty, which provides the basis for CABE’s (2005) current assessment of schools.

2.1.1.2.2 Classrooms

Robson (1877) designed schools in which classrooms would generally feed off a central hall, and which allowed the head teacher to easily observe lessons. Spatially, the concept of the central hall predominated but there were some examples of classrooms off corridors, depending upon the site and the architect. While there were instances of this format prior to the 1870 Act, Seaborne (1971) notes that schools were typically much smaller, often comprising just one room. The classroom system was derived from the example of Prussian schools which, despite Robson (1877) arguing the system was overly militaristic and describing them as a ‘series of small barracks (p.71),’ became the dominant architectural element of the Board schools (Weiner, 1994). These were designed to accommodate, on average, sixty children (Doddington & Hilton, 2007). Doddington & Hilton (2007), however, maintain that Robson’s less favourable views of classrooms

were overridden therefore highlighting that even as the classroom system emerged on its present scale, it was born amidst criticisms from its chief architect.

Referring to the classroom layout, an example of which is shown in Figure 2-2, Jordan (1987) notes that the 'room was undifferentiated for activity, but teachers' space was considered sacred (p.179).' The children's furniture in Board schools typically comprised wooden benches and desks which were joined with cast iron metalwork. These were often fixed to the ground and afforded little comfort or movement and set in rows facing forwards towards the teacher's desk and a blackboard (Seaborne & Lowe, 1977). Despite the basic nature of the furniture, Robson (1877) placed importance on the quality of its manufacture, making the connection between its quality and the degree to which children might value it and, consequently, their education.

The extent of the furniture and particularly the objects was generally limited, although Lawn (2005) mentions that object lessons were central to the pedagogy of the day and compulsory by 1895. While objects varied, typical features included a globe, abacus, slates for writing and often a display cabinet which sometimes contained stuffed animals (Lawn, 2005).



Figure 2-2 Replication of typical bench and desk furniture of the Board schools. Photograph.

Source: http://www.danum-photos.co.uk/pages/beamish_board_school.htm

2.1.1.2.3 Well-being

In the context of the well-being model and today's considerations, there are many ways in which the Board schools might be seen to be limited in their focus on the child. Weiner (1994) identifies the role of the schools to be predominantly concentrated on teaching the 3 Rs and not about children's broader well-being. In the context of the day a child's success in this area can be considered child-centred, albeit narrowly, although schools were perhaps governed as much by the inspectorate of the Boards which Mitchell (1996) observes determined funding based on children's results.

Despite this, Burke & Grosvenor's (2008) caution of reading the past 'shaped by current concerns and understandings (p.28)' is resonant and it is difficult to escape the following declaration of Sherlock Holmes in the literature surrounding school design: 'Lighthouses my boy! Beacons of the future! Capsules with hundreds of bright little seeds in each, out of which will spring the wiser better England... (Doyle, 1992, p.420).'

However, in today's context and with further reference to the model, it is difficult to see how social interaction, relaxation, expression, and enjoyment, as examples from the well-being model, are explicitly encouraged by either the design or the organisation of the school; thus illustrating how concerns of well-being can be strongly directed by the culture of the school.

The layout of the classroom furniture overtly discouraged social interaction, giving children immediate social access to just the two children either side. This interaction would have been strictly controlled and disapproved of: Doddington & Hilton (2007, p.21) refer to the maintenance of discipline by 'great strictness and perpetual vigilance.' With the classrooms designed for sixty children (Mitchell, 1996) on average, consideration of the children as individuals may appear in today's context to be non-existent.

Form a sensory point of view the object lessons can be argued to have been mainly visual and rarely encouraging children to move and to touch objects: '....the instruction became, on the whole, merely verbal, and the pupil remained passive (Raymont, 1937, p.143).'

Even the outdoor play space was carefully managed. Boys and girls would typically have their own playground with a separate entrance and in Robson's design of a nursery school in Figure 2-3 it can be seen that playgrounds were often viewed as marching grounds. Despite reflecting the shadow of war and the desire for fit and disciplined troops to protect the empire, this is not however inconsistent with a child's health and, in relation to the well-being model, the need for

physical activity. It also indicates how motivation for an individual's well-being might be considered duplicitous, yet as Chapter 1 identified, derived from society's perceived needs.

It can also be observed that the distinction between play in the outdoor spaces and the serious business of learning indoors is evident in the design, another legacy which the current programmes are trying to address.

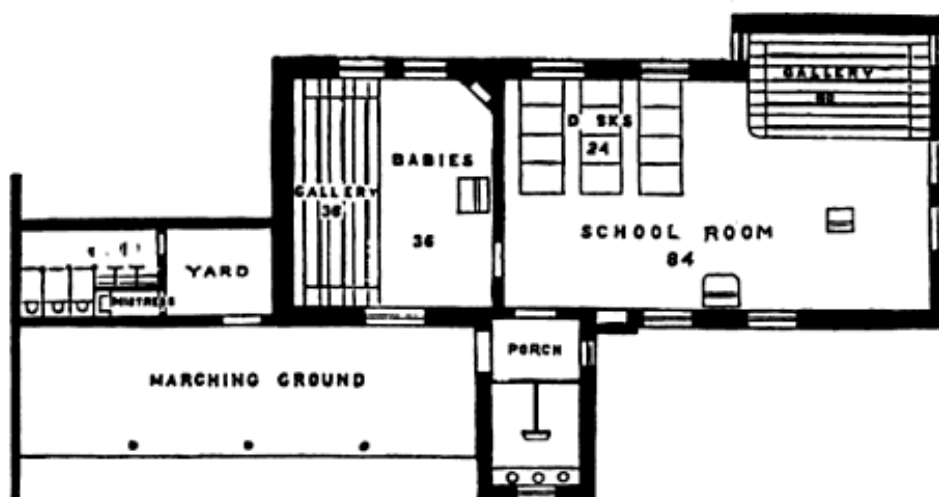


Figure 2-3 Robson's nursery design illustrating the marching area. Source: Robson (1877)

Concern for the children and their development may be limited in today's interpretation but it has also been compared unfavourably by Weiner (1994) with practice in the United States and Germany for example. Weiner (1994) states that 'What emerges from an examination of infants' education and school accommodation is a sharp discrepancy between the avowed concern for the child and the absence of educational theory informed by any serious study of child behavior and development (p.120).' Weiner (1994) is particularly conscious of the work of Friedrich Froebel (1782–1852), the mastermind behind the kindergarten movement which Doddington & Hilton (2007, p.14) describe as 'Perhaps the most powerful institutional framework ever invented to embody and promote child-centred ideas.' Ross (2000) argues that Froebel, along with Pestalozzi, acknowledged the social nature of the child and importantly identified learning as a social activity.

2.1.1.3 Review

The child-centred motivations during this significant period of school design, within the social, economic and political context of the day, are undeniable yet narrow in today's context. The maintenance of the classroom environment as a setting for visual and aural learning in which

movement was restricted has significant repercussions today (discussed further in Section 2.1.4.2).

Although Woolner et al. (2005) liken today's school design most with the post Second World War era (See 2.1.3), there are many parallels with the Victorian Board schools. The positioning of schools as central institutions critical to the community, as is the intention today, probably encourages an observed exterior focus in design.

Finally, Gardner (1998) estimates the number of teachers who came into the profession following the 1870 Act trebled within 30 years, a statistic which also includes the replacement of many pupil teachers. As a result the development of the physical environment could not be seen as an organic evolution which involved the teachers and with the environment pre-dating the mainstream profession there is arguably an endemic cultural acceptance of the physical form, evidenced in the study schools.

2.1.2 1902-1945 – Including open air schools

2.1.2.1 Intentions

At the turn of the 20th Century there was a determined movement towards schools which placed greater value on and promoted the health of children in which Woods (2000) notes that the medical repercussions of the industrial revolution were being felt in urban areas particularly. The Board schools were considered to be poorly lit and ventilated and it was believed that they contributed to children's respiratory problems (Burke & Grosvenor, 2008).

Although Chapter 1 identified health as falling within well-being, concerns might now be viewed once again as duplicitous. Whiteside (1988) notes that they were derived from a fear that many men were not of sufficient health to fight or support industry, highlighted during the Boer War and in the period of political tension in Europe prior to the First World War. While it would seem therefore that motivations for children's well-being are not entirely altruistic, this was a response to what were perceived as extreme needs. As a comparison, similar developments in France indicated that motivation for health, and healthier schools, was linked to the maintenance of racial purity (Rey, 1912): a motivating factor in many European countries at the time but dubious when assessed in today's context.

The resultant open air schools, as they became known, concentrated on the provision of daylight and fresh air and consequently challenged architectural preconceptions about how schools should

look. As intimated above, the movement occurred internationally and Hertzberger (2008), describing Duiker's famous open air school in Amsterdam (Figure 2-4), also indicates the interest in hygiene and school design which supports it. This compares with earlier, less urban styles represented by Uffculme School (1911), for example, in Figure 2-5 on page 54.



Figure 2-4 Duiker's open air school Amsterdam 1930. Photograph. Source: <http://www.columbia.edu/cu/gsap/BT/EEI/HEATLOAD/heatload.html>

2.1.2.2 Design, use and well-being

The design brief of the open air school, following the tradition of the Board schools, arguably continued to offer the architect a limited test in terms of pedagogical and child-centred ambitions. However, it would appear that, on the basis of health, the opening up of the school inadvertently affected different social aspects of the well-being model. Greene (2009, p.10), who is generally positive in her portrayal, describes the setting:

The centerpieces of the structure were eight individual pavilion classrooms. Their glass walls were retractable on three sides, and the ventilation system allowed a curtain of warm air to protect the children from cold at all times. The pavilions were supported by a network of glass buildings which provided facilities for bathing, showering, and medical exams. Extensive park-like grounds permitted classes to be held outside periodically. Children napped in the garden or the solariums and were provided with rich, nourishing meals in open, airy rooms.

This example built in 1934 may have overcome some of the structural and functional challenges of the building structure experienced in the earlier open air schools; the freezing of ink in inkwells (Hilton, 2006; Collins, 1998) is testament to the architects' endeavours to investigate new materials including metals, glass and, so far, unused construction methods.

The designs focused on the basic elements of school environments, i.e. air and light and linked to this, hygiene. Research has since vindicated this quest in school design (Higgins et al., 2005). Natural light is often highlighted as a significant contributor to student achievement as a result of its biological effects (Chiles, 2005; Earthman, 2004). Although the evidence is not unanimous, Higgins et al. (2005) conclude that lighting can affect mood and attitude and maximising the use of natural daylight is today considered a fundamental requirement of the learning environment. However Higgins et al. (2005) also maintain that the supplementary use of artificial light is a necessity in the UK's climactic conditions.

Whereas the Board schools maintained a rigid distinction between indoor and outdoor space, open air schools by nature developed the principle of opening the school up to the outdoors and making this boundary less defined. There was a significant shift in conceptions of school architecture with three out of the four classroom walls being predominantly glass and retractable, and a subtle shift in the furniture saw gradual introduction of wooden chairs in schools (Chatelet, 2008). In addition to well-lit and well-ventilated buildings, the positive impact noted on health, and more generally well-being, of the Swedish and Danish *forest schools* is recent evidence put forward by Bentsen, Mygind & Randrup (2009) of the benefits of this approach.



Figure 2-5 Uffculme open air school 1911. Photograph. Source: Chatelet (2008)

The early 1911 example of Uffculme School in the West Midlands shown in Figure 2-5 demonstrates a vastly different, pavilion-style architecture from the Board schools and one which appears to have had an automatic effect on other aspects of the design. Although fresh air was primarily their remit, this thesis maintains that architects could not help but challenge the pedagogy even if it was simply to contest static learning inflicted by the bolted down benches of the Board schools. The mere fact that classrooms were opened up and some lessons were performed outdoors meant that furniture would need to be moved.

Responses were different in different schools and also different across the interwar period. While the style of furniture needed to be relaxed to introduce mobility, Figure 2-6 illustrates the transition from fixed heavy wooden benches and desks to freestanding chairs and tables. The furniture is often cumbersome however and at odds with the sense of freedom which the locations afforded. Despite an ideal opportunity to support the investigative nature of children's learning highlighted by Rousseau (2004) and Dewey (1930), there is considerable photographic evidence (see overleaf) indicating that rows of furniture were often literally shifted outside and the didactic style and method of teaching was unaffected. The open air school in Birmingham, depicted in Figure 2-6, illustrates that some teachers did however challenge the accepted methods, in this case abandoning the desk completely and locating chairs in a horseshoe. McNamara & Waugh (1993) and Marx, Fuhrer & Hartig (1999) have since argued the communicative merits of this type of layout.

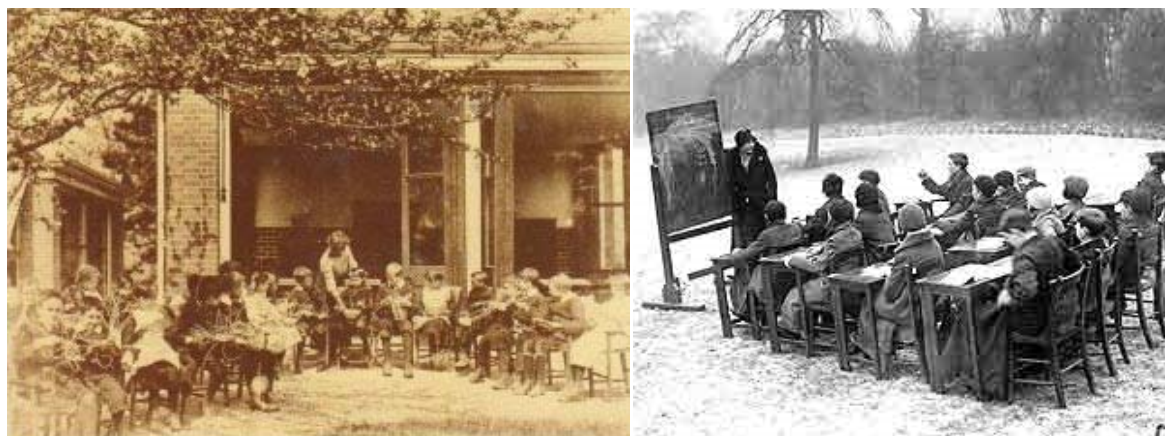


Figure 2-6 Contrasts in the use of open air schools in Birmingham 1911. Photograph. Source: Wilmot & Saul (1998) and St James' Park, London 1934. Photograph. Source: <http://arts.guardian.co.uk/pictures/image/0,8543,-10204514616,00.html>

It is relevant to note here that the teachers, working with similar physical design can direct a child's well-being in very different ways.

The open air schools had presented an opportunity through a relaxed architecture and furniture to pursue a broader child-centred agenda than just health. However, evidently the benefits of the design were not taken seriously beyond the original intention of promoting health and the open air schools failed to establish themselves as places for children who were not unwell. Their demise came as the buildings aged and the population was deemed to be healthier (Dudek, 2000). Arguably, new building techniques enabled a *healthy* return to the classroom.

2.1.2.3 Developing ideas about child-centred education

As the Board schools were emerging and, later, as the open air schools began to be developed for less healthy children, a philosophical debate was taking place which embraced much broader child-centred ideas. Up until this point it may be considered that the interests of schools resided in attainment and health within a controlling culture. However progressive ideas challenged the Board schools' pedagogy in a way that open air schools did not. Spencer, although already discredited for, among other reasons identified by Egan (2002), his unpalatable views on the education of the working classes and suffrage, inspired Dewey to publish a series of papers at the turn of the century which Egan maintains provided a convincing and coherent platform for the ideas of many *progressive* educationalists. The essence of these ideas was based on the self-directed, investigative nature of a child's learning which, it can be argued, match the current ambitions of personalised learning and illustrate that we are still struggling to introduce a very old concept.

A number of progressive educationalists, independent of the mainstream, emerged to investigate child-centred philosophies. Some like Isaac's Malthouse School were more experimental, as Dudek (2000) notes, than others such as Summerhill School described by Neill (2006), which continues to operate today. It is notable that in both Neill's account of Summerhill and Dudek's (2000) account of Malthouse School, both paid scant attention to the deliberate physical environment.

The formal recognition of such progressive ideas in the mainstream school system took some time in itself, appearing as Gillard (2007) points out notably in Hadow's report concentrating on the primary school published in 1931. The political appreciation of the needs of the child to follow their learning instinctive and individual interests was significant in the development of child-centred schools: 'there is too little which helps children to directly strengthen and enlarge their instinctive hold on the conditions of life by enriching, illuminating and giving point to their growing experience (Hadow, 1931, p.93).'

However, these ideas took much longer to find any articulation in teaching practice, and design for that matter, and the most significant change Gillard (2007) attributes to Hadow is the creation of two tiers in primary education separating infants and juniors.

Subsequent to Hadow and prior to World War II, the focus on providing children with the opportunity of secondary school education predominated which Seaborne & Lowe (1977) maintain deflected motivation away from child-centred ideas. Additionally, a now familiar criticism levelled at the pursuit of examination results was also cited as a reason why schools did not make any significant advances: 'For all primary schools, however child-centred their intentions, the great issue loomed of the 'scholarship' examination at age 11 (Doddington & Hilton, 2007, p.24).'

The architectural focus of this period was also argued by Saint (1987) to be driven by the availability of new materials and techniques, including an interest in the aesthetics of glass. In this way time has arguably stripped the rhetoric from Fry and Gropius' renowned Impington College (1929), illustrated in Figure 2-7, to reveal scale and style rather than pedagogic or child-centred interests as design intentions. Greene (2009) reflects this view that beyond the communication the substance was often lacking describing the open air school in Suresnes as 'precipitated on an irrational, symbolic faith in the power of harnessing sunlight (p.10).'



Figure 2-7 Impington Village College 1936-1939. Architect: Walter Gropius & Maxwell Fry.
Photograph. Source: http://www.overgrownpath.com/2007_11_01_archive.html

Therefore, although there was a concerted intellectual debate about child-centred schools, the beginning of the 20th Century and the interwar years illustrated a restricted application of children's broader well-being to Education or design.

2.1.2.4 Review

Despite their demise, open-air schools pertinently demonstrated an alternative to the architecture of the Board schools. They also allowed a subsequent relaxation of furniture which was a result of the buildings' form, indicating the relationship between architecture and furniture.

Furthermore, it was significant that the Hadow Reports recognised the growing debate about progressive philosophies in Education and added a political voice to the support of child-centred schools. However, there were numerous reasons why actual application in mainstream education was highly limited and slow. Relevantly these included the prioritisation of testing of children and the establishment of secondary education. Arguably both of these factors extended the existing culture, which was limited in its appreciation of well-being, to a much bigger population of children, making later revision all the more difficult.

2.1.3 1945 onwards – Including open plan schools

2.1.3.1 Intentions

The Hadow Reports had managed to bring the broader child-centred discussion into mainstream policy debate but, at the time, it had failed to be grasped. As well as the issues previously raised, there lacked an applicable intellectual hook to render these child-centred ideas practical; the looming prospect of World War II also hindered any real progress. Mainstream education therefore continued to evade the more progressive thoughts of Dewey (1930), let alone the radical work of A S Neill (Neill, 2006) and Isaacs (Dudek, 2000) which allowed children significant freedom in determining their own learning.

However, Gillard (1987) points out that the Hadow Reports had virtually laid the foundations for the Plowden Report of 1967 and, unlike Hadow, the Plowden Report was advantaged by a number of factors. Firstly, James (2007) identifies Piaget to be its single greatest influence. The educational key which enabled a determined dialogue and investigation of child-centred schools was afforded by Piaget (1975) who provided a substantial and scientific impetus to a movement which Wood (1998) noted needed a framework to move forwards.

Piaget (1975) determined that children develop in stages and that education should be organised to reflect these stages. Traditionally education was structured wholly around age but Piaget proposed that children reach these different stages at different times. Piaget's theory agreed with the naturalistic approach proposed by Dewey (1930); he described children as *little scientists* in recognition of the way they will instinctively investigate and learn and argued that education should enable this natural process to occur. Piaget (1975) was adding well respected science to support ideas which had been postulated by Rousseau (2004) many years before. Piaget (1975) was clear that basing learning on the traditional educational formula of seeing and listening was wholly inadequate. He, as Dixon (2004, para. 17) observes:

... saw that the traditional "delivery" model of teaching left the real intellectual development of children largely untouched. It denied them first-hand exploration, the creation and testing of hypotheses, and did not allow for the vital processes of assimilation and accommodation.

Secondly, Plowden (1967) reflected the political co-operation of the post-War period. The collaboration between architects and educationalists was symbolic of this general sense of accord, known as the *Post-War Consensus* (Bullock, 2002). In addition the restrictions on private

architectural practice mentioned by Saint (1987) meant that the school building programme was much more centrally controlled and cohesive although, in the light of today's concerns P. Connell representing PCP highlights a 'danger that such an approach could constrain innovation leading to a one size fits all approach (personal communication, February 23, 2009).'

The economic circumstances meant that schools needed to be delivered cheaply; immediately after World War II huts were considered to be the immediate solution to the lack of money in the face of school shortages and war damage (Bullock, 2002). Saint (1987) describes the subsequent prefabricated systems which evolved, such as CLASP and SCALA, predominantly a direct response to the economic constraints.

At the time, the post-War Hertfordshire style spoke for itself, sending clear messages of innovation (Saint, 1987). The building techniques enabled a variety of new spatial layouts which mainly converted corridor space into articulated shared learning spaces. Today, it is suggested by this thesis that age and familiarity have erased this effect but it is notable that meticulous work on building basics is the only area of school design in which there is a general consensus of positive impact (PWC, 2005).

The activities in Hertfordshire followed by the research of two of those involved in Oxfordshire and Buckinghamshire, David and Mary Medd, allowed Plowden (1967) to refer to a wealth of collaborative educational and architectural research which had taken place after the end of the Second World War and which resulted in a pedagogic approach inspired by Piaget (1975) and Dewey (1930). This thesis finds a direct contrast with the situation today in which research has not contributed prior to the substantial investment in new schools.

The pedagogy embodied in the Plowden (1967) recommendations comprised three theoretically simple methods which had already been applied in many rural schools where low school numbers and the inability to create conventionally-sized classes made it a matter of necessity (Freeman, 1969). These methods were known as team teaching, family grouping and the integrated day (Brogden, 2007), which effectively supported small group work and cooperative teaching in what was intended to be a very fluid school organisation and flexible timetable, rather than an individual teacher operating with a group of thirty children.

Plowden (1967) also echoed Piaget (1975), Dewey (1930) and Vygotsky (1978) in respect to its call for multi-sensory approach to learning (Wood, 1998) and therefore, as Gillard (1987) notes, included an increased recognition of the importance of the physical environment. The research

which followed the War, which Saint (2007) in particular attributes to the Medds, investigated the practice of these methods and focused on establishing a physical environment to suit. The supporting school design became known as open plan which David Medd ultimately distanced himself from.

As a result of these factors, Plowden (1967) felt able to highlight and recognise in policy the individual needs of children, a point which is clearly reiterated in today's objectives:

Individual differences between children of the same age are so great that any class, however homogeneous it seems, must always be treated as a body of children needing individual and different attention (p.25).

2.1.3.2 Design, use & well-being

At this point in the evolution of school design it appears that, with a clearly articulated pedagogy, an open plan design, and a shortage of money, architects were not as committed to the outer image of the school. However, it must be remembered that the visual impact of the school is being judged fifty years on and such retrospective scrutiny must be influenced by age and familiarity.



Figure 2-8 Eveline Lowe School (1964-66) and proposed refurbishment. Architect: David and Mary Medd (original) and HKR Architects (refurbishment). Photograph. Source: <http://www.london-se1.co.uk/news/view/3423>

On balance post-War school architecture was a good example of an inward facing design philosophy which was clearly exercised in the progressive work in Hertfordshire (Saint, 1987). It could be argued that for architects who were confident about the educative and child-centred value of their buildings, the outside became a lesser priority.

Another contributory factor identified by Saint (1987) was the restriction on private practice in school building following the War and it is feasible that this played a part in an overriding focus on the functionality of the buildings; in this way, arguably, school buildings were not seen as advertisements. The proposed refurbishment of the Medds' Eveline Lowe School shown in Figure 2-8 illustrates a contrast with the outward-facing intentions of today.

Once such restrictions were lifted however, there was a noticeable reaction from the architectural community. The best example of this was the secondary school at Hunstanton, illustrated in Figure 2-9, designed by Alison and Peter Smithson, which was arguably an unapologetic demonstration of an aesthetic. The style became known as *brutalism* and applied the stark use of glass, metal and exposed, almost unfinished, building elements which Reyner Banham (1966) notes was often criticised for ignoring children and pleasing only architects. Burke & Grosvenor (2008) argue the school had minimal influence on subsequent secondary school buildings.



Figure 2-9 Hunstanton School. Architect: Alison and Peter Smithson. Photograph: John Maltby.
Source: RIBA Library Photographs Collection

Similarly Haggerston School in Hackney, designed by Ernő Goldfinger and built in the early 1960s, was also stark in its character and use of new materials. The school is illustrated in Figure 2-10. This is attested to by Allen (2009) who claimed 'innumerable cumulative changes and ad-hoc additions have diluted the spartan clarity of the original design.' These 'changes and ad hoc

additions' appear to be ruled but it is arguable that, while the aesthetic may have suffered, they were evidence of humanisation and use of the building which contrasted with the design intention.



Figure 2-10 Haggerston School 1964-65. Architect: Ernő Goldfinger. Photograph: Kit Reynolds.
Source: <http://www.flickr.com/photos/kitreno/257500056/>

The concept of open plan as it was implemented is simple: 'An open plan school is essentially what the words imply – a group of large open areas which have few, if any, walls .. (Institute for Development of Educational Activities (IDEA), 1970, p.2).' In contrast, Finmere School designed by the Medds was characterised, not by its lack of walls, but by its nooks and crannies,' illustrated in Figure 2-11 overleaf. This simple difference was critically linked to perceptions of the child's nature and the investigative learning.

Rightly, Medd (1998) maintained that the design was not open plan in the sense that such schools came to be known, arguing that Finmere was specifically an investigation into the operation of small rural schools.

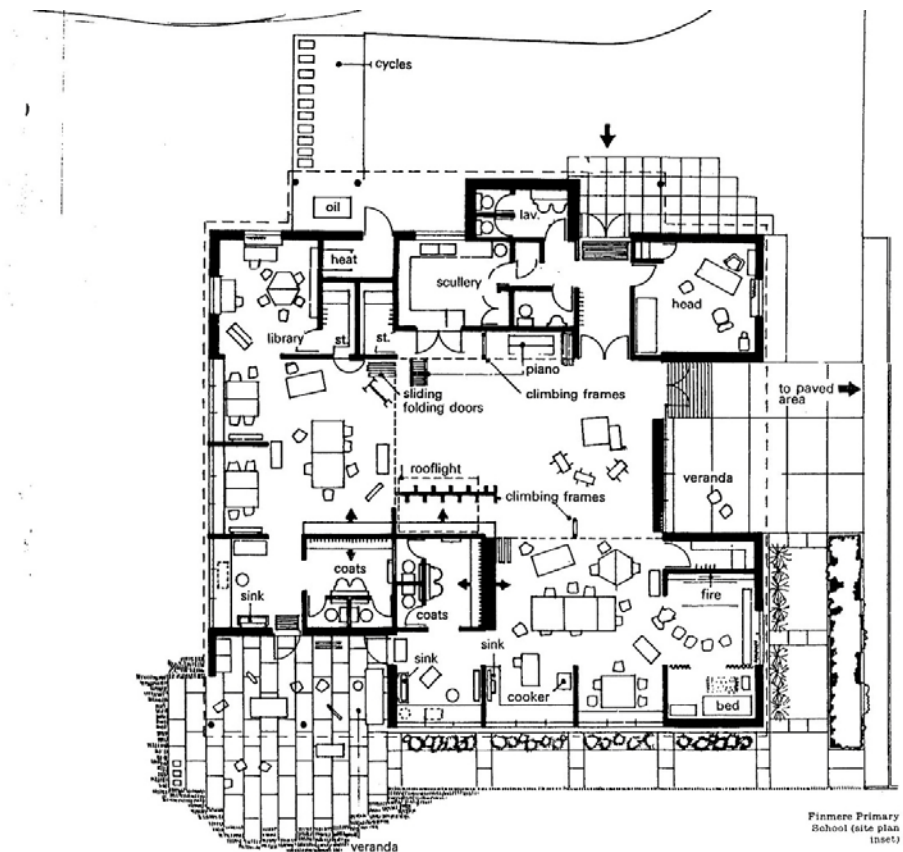


Figure 2-11 Plan view of Finmere School (1959) indicating the intricacy of design. Architect: David and Mary Medd. Photograph. Source: <http://www.bodders.org/finmere>

However, the application of the Medds' research was widened extensively and the Government's Building Development Group, came to consider open plan 'generally' the right way to work in primary schools, claiming that the 'combination of small numbers, a wide range and a diversity of interests and abilities, produces a more subtle relationship between teachers and children than occurs in most large schools, and encourages the sharing of skills, experiences, facilities and space (Brogden, 2007).' The reference to *sharing* reflects the perceived importance of social interaction and community in children's learning; it was believed that open environments foster the natural sharing of facilities and space. Interestingly, in his criticism of the classroom system, referencing its militaristic character, Robson (1877) had originally proposed open environments indicating a significantly different cultural approach from that actually adopted by the Board schools.

Based on this premise, Plowden proposed a pedagogy and a design and within a decade 10% of primary schools were open plan (Brogden, 2007) and despite evidence before and after of more traditional architecture, Saint (1987) indicates a clear sense that architects, in particular those associated with Hertfordshire, were starting to push the boundaries of school design and child-centred school.

2.1.3.2.1 Articulation of space

The previous section identified the discrepancy between the architectural intentions of the Medds' designs and those which became associated with the open plan era. It can be argued that while both could feasibly support new teaching approaches, their treatment of children's learning behaviour was different. Medd recognised the potential of traditional school architecture to determine behaviour and the nature of social interaction and used the building design to direct children towards a variety of social possibilities with a number of potential social and learning outcomes. This thesis suggests that open plan, beyond the provision of open space, saw architecture relieved of this responsibility and the role directed towards either the teachers or the furniture.

The well-being model explicitly describes social interaction and also expression and the motivation of Plowden (1967) was that this would be largely self-derived. Open schools as Medd saw them must be supportive and facilitate the decision-making of the child by offering variety as a way of stimulating thoughts and mood. Marc (1977) would support this psychological objective. He talks of the significance of a door and of its messages: 'to go through a door is to pass from one place to another, and therefore from one state of mind to another (p.38).' Although Finmere contained no doors in its original form, apart from the option of sliding doors, the design is consistent with Marc's interpretation of the psychological impact of specific spaces compared with one wide open space.

Interestingly, in the classroom versus no classroom debate, Hertzberger (2008) is an advocate of maintaining the classroom in order to provide a home base for the child but simultaneously to provide adventure as children venture out. Simply, by having two rooms the opportunity for adventure is arguably doubled. Hertzberger (2008) is also critical of the rectangle, the staple shape of Education, and its limitations. He proposes articulated classrooms which naturally produce multiple centres and advocates the use of L-shaped rooms in order to provide variety of social learning possibilities. His assessment is derived from Dyck who proposes that, 'the environmental qualities of classrooms—high/low, open/closed, big/little, vertical/horizontal—do indeed affect the learning process in young children (1994, p.43).'

Dyck (1994), in his discussion of shape also alludes to scale as a factor and another important consideration of learning space. The impact of scale on cognition and development has been widely studied, but as Bell (2006) claims there is an uncertainty of impact. Contemplating a child's discovery of a large open rectangular space, as was the case with open plan would, based on the

work of in Kyttä (2006), suggest limitations and child-unfriendliness rather than a contribution to well-being.

2.1.3.2.2 Furniture

It was previously suggested that open plan architecture in its prevailing form absolved architectural responsibility for providing a children-centred environment. The pedagogy was clear but the question is whether furniture was able or allowed to provide the children with new learning and social possibilities.

The furniture of this period continues to be seen in today's schools which are in fact suffused with various legacies of post-War designers who challenged the traditional wooden school chair by using new manufacturing methods and materials (Saint, 1987). Bond, Burns, Cottam, Coyne, Horne, Howland, Leadbeater, Shea, & Winhall (2002) describe the variety of chairs one might expect to find in a school.

There are Robin Day chairs, science stools, office swivel chairs, plywood chairs, plastic moulded chairs, polypropylene chairs with metal legs, cushioned chairs, benches, lounge chairs, reception chairs and library chairs. Some chairs have remained the same for 50 years (p.18).

The school chair is an example of relativity in how school design is perceived. Historically chairs have carried a status above stools and benches (Cranz, 2000) and bestowing each school child with a chair can be regarded as reflection of the value associated with the child's education; in this context a chair can be viewed as child-centred development, relative to Victorian benches. Raising aspirations would certainly apply to the introduction of school chairs, in addition to the flexibility they provide, an indication of the symbolic move to recognise the individual child.

The financial constraints of the post-War era are clearly reflected in the development of furniture which is now available in schools. Robin Day's 1963 injection moulded polypropylene chair evolved into a low cost school model called the e-series which was highly innovative at the time but now, as one supplier describes, 'shows extreme strength and durability, making it ubiquitous in educational establishments (Chellgrove, 2009).' Therefore, although it was once revolutionary, its ongoing affordability has meant that it has presented a major obstacle for any new design to permeate the school market since. While the use of plastics is directly contradictory to the philosophies of Steiner and Montessori, who Knight (2009) identifies as strict advocates of natural materials, to get any noticeable change in the furniture of mainstream schools designers had to

find low cost options and plastics technologies were exciting and appropriate at this time. Despite the guiding economic situation, there is evidence that it was not only architects who were arguably starting their design process by considering materials and methods rather than the needs of the user. (Steiner and Montessori are discussed further in Chapter 4).

Once again it was in Hertfordshire, and later in the pursuits of those involved, where a more concerted, holistic approach to architecture and furniture was adopted; Saint (1987) identifies that Medd and Johnson-Marshall challenged the rigidity and uncooperative nature of school furniture by designing freestanding tables and chairs with the aim of supporting group work in a way that existing oak or cast iron school furniture inhibited (Burke & Grosvenor, 2008). Figure 2-12 illustrates child-sized chairs designed by Medd, evidently capable of being moved around by primary age children.



Figure 2-12 Child-sized chairs 1946. Photograph. Source: Institute of Education

By the 1960s David Medd was working with PEL (Practical Equipment Ltd), a manufacturer in tubular steel and plastics, to promote the FORME range and its impact was highly significant both in the UK and Europe (Saint, 1987). Saint indicates that the range, informed by newly available

anthropometric data, became known for its mobile storage units, rectangular or trapezoidal tables and child-sized chairs. These supported smaller group work and flexible groupings advocated by open plan and are still observably highly evident today.

Therefore, while open plan architecture as it was applied was considered a failure (Brogden, 2007), the furniture which was concurrently designed enabled the shift to group working in primary schools. This was in direct contrast to the rowed seating of the Board schools and the situation found in many secondary schools today (Greany, 2005).

Figure 2-13 illustrates a typical open plan layout and the relationship between architecture and furniture in St Paul's Primary School in London. The importance placed upon the furniture to provide the social and learning possibilities is evident, although despite the adaption of furniture to the needs of group work, it appears that schools went from a one dimensional approach to children's learning to a slightly different one dimensional approach.



Figure 2-13 Open plan school. Photograph. Source: Waterhouse (1972)

2.1.3.2.3 Use of open plan by the school community

In spite of the apparent alignment of pedagogy and design, the open plan experiment, Brogden (2007) contends, was widely considered to have failed and, as the last major school building programme, the impact on the current programme cannot be understated. Importantly open plan is now struggling against this historical failure to reassert itself, as will be discussed later in this chapter.

Compromises were made which resulted arguably in bland open environments and the experience of open plan environments turned out to be quite contradictory to the Plowden Report (1967). Reviewing how these schools were used and ultimately rejected raises some relevant issues relating to the overlaying of traditional school culture and well-being.

Faced with a wide open learning space it is interesting to note that it was not long before teachers began to erect temporary barriers to compartmentalise the space; in fact Evans (1979, p.30) claims ‘... the very barriers which the educational architects claimed were dissolving were in fact reinforced and in some cases instigated in response to the new forms.’ In effect they were recreating the classroom and establishing traditional teaching practice which was maintained and even intensified in order to establish organisation in the school. Figure 2-10 illustrates the barriers which began to appear but, even after these changes, the style of teaching arguably became more prescriptive (Bennett & Hyland, 1979).

As a result, teachers were heavily criticised for resisting change (Brogden, 2007). To start with King (1978) believed that teachers considered child-centred education to be what they already did and therefore did not associate it with any necessary change. Connected with this Bennett & Hyland (1979) also related the open plan failure to the teachers’ unwillingness to forego their territory, which was argued to be a status symbol for a qualified teacher. Furthermore there is no doubt that on top of the usual ability to engage and stimulate children and Galton, Simon & Croll (1980) note that open plan schools required organisational and co-operative skills very different from those needed in a standard classroom. Galton et al. (1980), by studying open plan teaching compared with classroom teaching, noted that teachers in open plan interacted much less with children, asking fewer questions and making fewer statements, and spending more time marking. This is in a sense consistent with independent learning directed by the child but it would seem that the teachers who were willing and able to thrive in this environment were a minority. According to Galton & Simon (1980, p.95), ‘only 5 per cent of the successful teachers operated in open-plan compared with 38 per cent of unsuccessful ones.’

In defence of the teachers, generally the environments lacked the possibilities originally offered by Medd to the point that even *withdrawal spaces*, as Galton et al. (1980) describe them, were only typically available through the architecture if walls had been knocked down in an existing building. In addition it was argued that open plan was not well implemented; in fact Brogden called it an imposition (2007). While Medd spent many years working with teachers prior to architectural changes (Woolner et al., 2005), when open plan was instigated Brogden(2007) notes the omission of teacher training. In summary he calls the whole experiment innovation without change resulting in the 'silent majority', the teachers, continuing to teach traditionally in spite of the changes to the physical environment.

Teachers also blamed certain aspects of the architecture for their response. The buildings often failed to meet teachers' expectations of acoustic and temperature integrity but it would appear that whatever materials and techniques were used, the large void led to complaints of distraction and difficulties of maintaining concentration and control (Bennett, 1980). Even today there are claims that newly appointed open plan schools are acoustically inadequate (BBC, 2009).

Furthermore, it is argued that with poor acoustics comes lower attainment, particularly for children with hearing difficulties (NDCS, 2009). This in turn therefore becomes an issue of inclusion and so it is very relevant when the National Deaf Children's Society (NDCS, 2009) claims that only one in five local authorities could confirm today that the Government's standards on acoustics had been met.

2.1.3.3 Review

Commentators were unified in their criticism of open plan although many still believe that it was the right concept just implemented badly. There is no doubt, however, that it was emphatically rejected.

It is disputed whether open plan failed because of the educational vision itself or because of the execution of this vision, questioning whether teachers were at fault for not embracing the change or whether the change was at fault for not embracing the teachers. However, the international failure of open plan described by Martinho & Freire da Silva (2008) is highly significant.

Beyond the child-centred aspirations, there was a certain failure to appreciate that the Victorian requirement for control and discipline had not gone away. The issues of concentration and distraction were determining factors and the erection of makeshift classrooms, while arguably territory-related responses, could most probably be interpreted as controlling devices. On balance

there were many factors including money-saving design and poor implementation but also the detachment of teachers from children, this discussion alludes, was a difficult and perhaps unnatural cultural adjustment. The experience significantly highlights the ability and willingness of teachers to defy new practice and to neutralise the impact of a major change to the design of the school environment. This indicates the limits of architectural determinism in schools.

Meanwhile, the relationship between architecture and furniture changed and furniture slowly moved forwards while architecture took a step backwards. Group working and supporting tables and chairs (illustrated earlier in Figure 2-13) were probably the most significant design developments of this period which have been sustained in an educational sense. Ultimately however it would seem that motivations for both were strongly materials and economics-based.

2.1.4 A perspective on today's new schools

It has been suggested that movements in school design tend to be international phenomena and today there is a great degree of commonality of purpose in current thinking regarding school design across countries (Hacker, 2001). Representing the Organisation for Economic Co-operation and Development (OECD), Hacker (2001) recognises the widespread desire to develop the individual within an uncertain environment relating to the direction of Education. However, he also notes the broader concerns of the environment and maintains that the school should be 'a tool for learning and not a monument to aesthetics (2001, p.vii).' Despite common ground there is no preferred design model within or across countries; a feature which has previously characterised programmes, although one which is perhaps most evident retrospectively. Additionally it appears that the current school programme is catching up with previous design ideas which failed to become established involving principles of open plan and open air schools.

Many proposals include open or semi-open plan designs (Dorrell, 2005) underlining a concerted reaction against the classroom: 'the classroom is at the heart of the sense of dismay felt by many pupils and teachers: an obstacle to be overcome by the motivated, a source of defeat for those who are already struggling (Bond et al., 2002, p.8).' The descriptions of the activities described in more open schools and the methods used in support are, arguably, highly reflective of Plowden (1967): at a primary level, it can be contested that the main difference between Plowden's (1967) recommendations and personalised learning is that hand-held technology (Heppell et al., 2004; Page, 2008) is seen as the main facilitator and not architecture. However, the central issue of open plan is unresolved in which open, undifferentiated space is potentially contradictory to

ambitions of individualisation and undermining of the need to manage and keep control of a large number of children.

A similar example of renewal relate to the architectural relationship of the school with the outdoor environment. The design at Larmenier and Sacred Heart Primary School, it is claimed, 'blurs the distinction between indoors and outdoors (Learning by Design, 2007, p.31) which, quoting Patel (2007, p.33) 'meets the child's need to move around freely and stimulates their learning.' However, it is detectable in the emerging designs (DfES, 2003a) that this focus has typically been to develop distinct spaces in the outdoors and it is questionable how much play is considered within the more formal learning environments inside the school. As such it would seem important to understand how children view their outdoor school spaces and whether keeping them free from formal learning activities is important from a territorial point of view. The relevance of the traditional demarcation between social spaces and learning spaces is considered in Chapter 6.

2.1.4.1 New intentions: Sustainability

There are some motivations based upon well-being which are new. The term sustainability in design accounts for today's perceived environmental threat and has not previously explicitly appeared as an objective in school building programmes. Learning by Design (2007, p.6), an architectural education advocacy group, defines sustainability in a diverse way, citing the conservation of energy and resource, minimisation of waste, protection and enhancement of nature, respect through involvement and the creation of buildings of long term value. There is an implicit motivation to improve children's well-being in the long term by protecting the natural world in which they live. Lochhead, Bulmer, Tidcombe, Battaglia, Green, & Davidson (2007) suggest that children are highly conscious of the environmental debate and, for them, it is important for their school buildings to meet the environmental challenges.

Without understating its importance this thesis suggests that sustainability in carbon terms must also be considered a fundamental basic of design. In addition it has been noted previously that the structural aspects of buildings have, in hindsight distracted from, and even been disguised as, other more affective goals. It is possible that environmental sustainability has offered today's architects a means of adding value in a more direct and tangible way but again without challenging the human and learning aspects of design (Rudd, 2008b) and architects' descriptions can be interpreted as preoccupation with such issues (Kuszell, Lloyd Jones & Stewart, 2008).

While sustainability emphasises materials, construction methods and the school's day-to-day energy use, perspectives on sustainability have increasingly begun to accommodate the school's long term value, i.e. its longevity, in which more effective *affective* design is vital.

The effort to build schools to last is the premise of the current programme which seeks schools of longevity; the Scottish experience follows a similar line in which 'Sustainable buildings should be designed for a long life, serving their communities for many years (Scottish Executive, 2004, p.5).'

The length of life of a school is not just a question of structural quality; 'Sustainability needs to start at the beginning: the educational vision' and 'Design should start with an assessment of current educational needs and be flexible enough to accommodate future changes in educational practice (DfES, 2006b, p.7).'

In effect this places an additional pressure on designers, as Chapter 1 described, to second guess the future state of Education in thirty years' time.

As an answer the perceived need for flexibility in design reflects this unknown direction of Education which, this thesis suggests renders the potential of architecture, in particular, greatly diminished by an attempt to cover all possibilities. This is exacerbated by a paradigm dictating that school design should not unduly influence the pedagogy (Heppell et al., 2004) abiding by Bennett's assertion that 'most teachers believe that the design of a building should not dictate organisation (1980, p.39).'

Related to this, the Government appears not to consider the educational opportunity and environmental effect of building schools which are replaced more often, akin to the largely isolated example of Cottrell's cardboard schoolroom at Westborough Primary School in Westcliff, Essex (RIBA, 2002). It is arguable that the organisation of new school building programmes prefers a one-off, high-impact approach rather than a continuous cycle in which learning, expertise and new ideas may be arguably generated. It is feasible that more regular replacement would be more accommodating of current trends in Education and liberate architects from attempting to design for the unknown and a very long lifespan; thus potentially justifying a more aesthetic approach to design.

At a more affective level, Lochhead et al. (2007) broaden the sustainability debate to 'inclusion and participation; local well-being; and global dimension (p.5)', which can be considered in the same context as the well-being model. Experience from the current programme indicates tenuous claims of contribution to well-being through affective design which, evident in Heppell et al. (2004), tend to be limited to concerns of inspiration. For example, Rasmussen's (1964) study of

dimensions in architecture explains the origins and popularity of the golden section, or golden mean, tracing it back to Pythagoras and Fibonacci and highlighting its influence on the work of Le Corbusier. It was Macody Lund (1921) who famously argued that the greatest works of architecture were based on this ratio yet it represents a rather hackneyed approach to school design, in which the romanticism of Fibonacci, da Vinci and Le Corbusier is preferred to anything proven. Studio E Architects, for example, refer to the golden mean as ‘a symbol for its young community – the mathematics of nature within the structure of their building (Kuszell, Lloyd Jones & Stewart, 2007).’

There are other examples in which architects are arguably guilty of overplaying the psychological impact of their school designs without evidence. Red exterior brickwork is claimed to create ‘a feeling of a safe, permanent and secure environment (Learning by Design, 2007, p.29),’ in which the architects have rightly or wrongly chosen a traditional form and material but then justified its lack of innovation as something which children feel secure about.

Architects have also reacted against the ubiquitous right angle by designing a school with round classrooms. The local authority claims Abergwynfi Primary School is more inclusive: ‘no-one is at the back of the class and no-one is at the front. It's all-inclusive (Nutt, 2009).’ This design represents the antithesis of the Medds’ philosophy by providing an enclosed, possibly disorientatingly undifferentiated space. It is proposed here that rather than personalising learning this type of design attempts to homogenise children even more.

Developing the reference to inclusion, there also appears to be an international misunderstanding of well-being and its components. For example, Soininen Primary School in Helsinki refers to inclusion, citing what would appear to be very superficial considerations when considering its complexity: ‘The inclusive nature of the school is expressed in the close relationship of the building to the surrounding park and in the multiple entrances to the building, clearly defined by the flowing lines of the external wall (Hacker, 2001, p.9).’

As a result of the decentralised nature of the school programmes, the subsequent designs are perhaps more varied than previous programmes. While Abergwynfi Primary School concentrates on undifferentiated space the exemplar design brief describes the provision of ‘seating areas and quiet corners’ to ‘encourage social interaction (DfES, 2003b, p.4).’ This indicates the motivation for social spaces and is consistent with the design objectives alluded to by the well-being model. Beard (2005) however comments on the generally inadequate provision of social areas in the current designs and, as previously mentioned, these are highly segregated spaces.

Relevantly, central atria or courtyards are common features, evident in Dulwich Wood School and Kingsley High School (Nicholas Hare Architects LLP), for example. Walters & Cohen (2003) describe a social hub, or the heart of the school, where everyone can come together informally consistent with the DfES design brief (2003b) which remarks on the educational contribution of such areas offering an 'informal curriculum.' Chapter 5 will consider the implications of prescription and design elements which appear to be artificially derived.

2.1.4.2 Furniture as a means of control

So far this thesis has maintained that school architecture has been limited in its approach and understanding of affective design, preferring to concentrate on basic structural and functional requirements of the building whilst courting the design objectives of previous school building programmes. However, as architects struggle with the legacy of the Victorian classroom, school furniture similarly appears to have difficulty in breaking the hold of the polypropylene chair; working as part of the *Kit for Purpose* team (Bond et al. 2002), L. Howland (personal communication, 28 June 2005) notes how the cost of a mass produced school chair estimated at £7 (2002) is highly prohibitive to a school's ability to afford and justify alternative school furniture. The chair is a good example with which to assess current motivations in furniture design.

Evidence does not reveal any ambitious moves away from the basic unit of the school chair and table: 'Teachers generally buy what is on offer in standardised catalogues, often to replace worn-out equipment rather than to pursue a strategy for learning (Bond et al., 2002, p.12).' Dean (2008) also makes it clear that there is a fundamental cultural difficulty in primary schools moving away from the paradigm that each child should have their own chair and desk space: 'Many primary children spend a lot of time on their feet and it is not unusual in a primary classroom to see almost everyone standing and the chairs very much in the way (p.196).'

The focus of furniture design today has tended to concentrate on secondary schools with a seeming acceptance in primary of what already exists. Reviewing a few examples of what is considered by the Design Council (Greany, 2005) to be innovative furniture design in secondary education is indicative of the difficulty in making any fundamental advances in design. Greany (2005) describes the *360 degree classroom* experiment carried out at St Margaret's School in Liverpool in which a chair/desk unit was designed. The system, shown in Figure 2-14 is movable and allows students to face different directions intended to counter the less dynamic classroom in which rows of desks face the teacher who remains static in front of the same wall each lesson.



Figure 2-14 The QPod. Designer: Stage Systems. Photograph. Source: Greany (2005)



Figure 2-15 Orbital 2002. Designer: Azumi with keen. Photograph. Source: http://www.isisconcepts.co.uk/educational_solutions/tables/isis_orbital_workstation.html

As a criticism it can be argued that the furniture provides only a minor challenge to convention, particularly in respect to the students themselves which, in a child-centred school, is arguably paramount. The design is perhaps most liberating for the teacher and reinforces the hierarchical nature of classroom activity by indicating who is in control. It also reinforces the role of teacher as a performer (Dean, 2003) which would seem to be at odds with a personalised learning approach in which, as Tapscott & Williams (2008) identify, the teacher is no longer considered to be the font of all knowledge. Claims that the students can move their QPods, as they are known (Figure 2-14), to work in pairs or groups are contentious given the design and it is arguable that the units will become static in the same way in which their predecessors have been. Similarly, Keen and Azumi's orbital workstation (Figure 2-15), a winner of the Design Council's 2003 Furniture for the Future competition, is based along a similar rotating principle. Despite the profile of their designers, both of these designs could be viewed as a retrograde step in which the seat has been rejoined to the desk, as per the Victorian Board model.

Considering this in the light of the school's socialisation role, and needs of control, the design also includes a mechanism which precludes the workstation from being moved if it is being sat on.

Another example of design which is motivated by behavioural concerns is the *Max chair*, created by *Sedley Place*, which prevents the pupil from rocking backwards: 'an image familiar to every parent and teacher - a child leaning back on a chair, balancing precariously on the rear two legs.' This, it is claimed, is the cause of 70% of children's school-related admissions to hospital (Asthana, 2008, p.7). How valid these figures are is not particularly relevant; it is perhaps more pertinent to consider the concerns of disruption and misbehaviour underlying these motivations of health. Asthana (2008) quotes Neal, the national president of the Association for Teachers and Lecturers: 'There was a case in Devon where a class wasn't well behaved, and when the teacher turned around they were all swinging off the chairs. One girl fell off, suffered a long-term injury and her family tried to sue the local authority.' Within this explanation, the girl's health is arguably secondary to the negative experience and protection of the teacher.

Furthermore, it is revealing that the design solution offered prevents rather than allows some form of safe rocking, or movement at least. It is possible to argue that rocking is a rebellious, confrontational act as Neal suggests. On the other hand there is an increasing number who believe that fidgeting is either natural and an important part of learning (Pine, Bird & Kirk, 2007) or a product of the pedagogy (Robinson, 1994); in either way this thesis identifies the decision to prevent rocking as one which does not put the child first and perpetuates learning environments which preclude movement.

This is reflected in Bond et al.'s (2002) primary contention with the design of school chairs, in which poor ergonomics is identified as the reason for restlessness:

Much of the students' energy and concentration is directed into compensating for ergonomically inappropriate furniture, making them restless and therefore disturbing both their own and others' concentration (p.21).

The British Council for School Environments (BCSE) agrees, citing poor ergonomic design of classroom chairs and desks as the reason why 50% of school children report back pain; In turn it is claimed that this will have some effect on 'attendance, concentration, handwriting, ability to participate in sport, relationships and well-being (BCSE, 2007, p.7).' However, on the basis of the preceding discussion, this thesis contests this view is simplistic; rather ergonomics is a distraction from the dynamic and human elements of furniture use and fails therefore to fundamentally challenge the concept of the traditional chair (See Chapter 5). Moreover research such as Linton, Hellsing, Halme, & Akerstedt (1994) can be argued to promote the static classroom, prioritising sight and hearing over other senses.

Concerns about physical inactivity in children and growing levels of obesity, Ziviani, Wadley, Ward, Macdonald, Jenkins & Rodger (2008) note, are expressed by politicians, health economists and those involved with the health and well-being of children. In fact the Design Council (2005, p.20) maintains that on average a child will sit for 15,000 hours during their school career using the same furniture used by 11 to 18 year olds. Surely therefore the most relevant question is should young people be made to sit for this period of time and how can the concept of the traditional chair be challenged to support a cultural change in education? Such questions support the view that design is often carried out with only a narrow appreciation of Education and children.

2.1.4.3 Influence of the Economy

Dudek (2000) criticised the Victorian Board Schools for producing fodder for manufacturing. Meanwhile, earlier in this thesis it was suggested that today's focus on the individual and their creativity is equally economically derived; the intent to provide 'fodder' for the global economy is exposed. Conspicuously, from the ordered *factory* lines of the Board schools through to open plan, and today's academies, schools have also tended to take their form from the workplace.

In the latest round of school building, not least in the academies, it can be maintained that a wholly corporate image is conveyed; the signage and labelling of spaces as syndicate rooms or break out areas, 'hot-desking, hotelling and rightspace (Clarke, 2009, p.22)' represents the

influence not only of office design but additionally of practice. It would appear that criticisms levelled at Education of a school culture which is 'overly rationalistic, scientific, corporatist, managerial, and narrowly results-based (van Manen, 2005, p.219)', are being reflected in the designed environment. More relaxed design concepts drawn from high profile examples like the Google offices in Seattle, offer further evidence that architects are looking to corporate styles and influences. Influential bodies like the BCSE (2007) who have highlighted the advancement of office environments to illustrate the paucity of school design must in part have contributed. In addition many practices involved in school design are reverting to experience gained in the office sector and not in Education.

While there is an argument, upheld in principle by the well-being model, that a child's long term well-being is strongly connected to how prepared they are to function within society and the economy and the physical form of schools should promote this where it can, there is a suggestion that in this way design may be contributing to a theft of choice and aspects of childhood. It is feasible also that this indicates a subliminal preoccupation with conditioning in school design and narrows the possibilities for the child later in life. The idea that design might contribute to a theft of choice is particularly resonant as commentators like Craft (2005) question Educational policy based on the uncertain stability of the global economy and its suspect environmental contribution.

2.1.4.4 Review

The historical legacy of school design provides a useful context for appraising what is currently happening in BSF and PCP and generally the current programmes appear to be revisiting previous design ideas.

The attention paid to architecture continues to take precedence. This is understandable considering that the building constitutes the greatest capital cost, roughly between 80% and 90% depending on definitions (DfES, 2003b; Vanscreech & Heard, 2008) yet it is uncertain whether architecture represents 80%-90% of contribution to a child's well-being. Additionally it can be contested that the innovation which is apparent in these efforts is often limited to an exploration of building technology, related in particular to the environment. Associated with this thesis notes that school furniture continues to be an afterthought, complying with the convention highlighted by Bond et al. (2002).

Where furniture has been considered it is suggestive of teacher-centred, prescriptive motives and even retrograde steps in design. The new architecture may be more open or visually different

from what one might expect from a school but the furniture appears to sustain a controlling role (See Figure 2-16). Even ergonomics can be argued to be a way in which children are made to sit for longer than their body would naturally choose.



Figure 2-16 St Francis of Assisi Primary School 2003. Architect: Studio E. Photograph. Source: <http://www.studioe.co.uk/futureclass.html#>

This is partly representative of the influence of the economy which was proposed earlier to be very apparent in Education both in terms of the curriculum and its design. Levelling a criticism of conditioning at schools, office-type environments which are based on static behaviour would seem to detract from a genuine interest in the individual child and contradict motives for engendering creativity.

The current preference for longer cycles in school building, contrasting with the prefabricated experience following the World War II, means that the concentration on aesthetics must be considered very carefully. Familiarity may well undermine the pursuit of inspiring children through aesthetics early in the life of the new school.

Finally, despite the introduction of some softer furnishings which are generally associated with the application of theories of learning styles, such as those of Gardner (1993) and Kolb & Fry (1975), this is still on the basis of very clear demarcation and labelling of space in which specific areas are created for either formal learning or more social, informal space. More broadly this thesis contends that the approach to personalised learning relates to such categorisation of space and is one of encroachment on social and outdoor spaces without consideration of the redesign of the more formal learning spaces; in these there appears to be a reliance on technology to effect cultural change (Rudd, 2008b; Heppell et al. 2004) arguably risking further compromise of children's physical and social expression.

2.2 Summary

The notion of child-centred schools has evolved over many years, from narrow interpretations of health, to encompass more and more facets of a child's well-being in which the philosophical debate throughout the 20th Century became supported by Piaget's (1975) scientific view of children and their development. On balance, however, history reveals that school architects were broadly making advances in the application of new building methods and materials contributing to the basics of school design whilst unsuccessful in revealing how a meaningful contribution can be made to children's learning and broader well-being.

There are exceptions however, and the Medds in the post-War era began designing to deliberately stimulate the natural tendencies of the child, considering architectural solutions which promoted investigative, self-directed learning. However, this chapter has indicated several reasons why these more radical concepts failed. The open plan experience indicated that while cost concerns contributed to mainly bland environments in which the differentiated space of Finmere School was forsaken, teachers were able to override the design and revert to traditional practice. Additionally, the forbearance of the classroom has been accompanied by slow development of furniture although, while the design intent evolved to encompass adaptability and movement in the learning environment, its actual use has been at odds with these motivations.

The response of teachers is indicative of a school culture which has repeatedly prevailed when challenged by the efforts of largely well-intended design, indicating that there is something other than a child's investigative nature which needs to be considered. Despite the prominent discussion about the development of the individual child, Chapter 1 suggested that the dominant concern is arguably how children will fit into society and acceptable behaviour which this requires. Preparing, or even conditioning, children to operate in an adult world, where Harvey (1981) argues ordered physical movement and personal space is highly valued, is potentially limiting children's development. Furthermore while designers are being asked to revolutionise the school, schools are increasingly being asked to take on the traditional responsibilities of the family (Olson, 2003) which has a direct impact at a behavioural level in schools.

Hence, rather than a discussion of philosophy in which societal and economic demands of the child are weighed against their individuality, the environment which reflects containment rather than attainment and a homogenous view of children appears to relate more to the demands of the daily organisation of schools. According to Pollard's (1985) primary school observations of

school values, ‘... we see the emphasis of attributes which could be said to meet industrial needs in terms of preparing a productive and compliant workforce,’ yet noting the supersedence of ‘teachers’ practical concern with sustaining *order and discipline* (p.109).’ Moreover, reflecting on estimates that a significant proportion of a teacher’s time is spent organising children, space and materials, Dean (2008) contends that it is in everyone’s interest to reduce such time to the minimum.

It is possible that the physical environment is complicit in this organisational role and has even determined aspects of the enduring nature of Education in the sense that the setting and its contents pre-date mainstream teaching. In this way the organisation of children has continued to guide the majority of our primary schools towards predictable *hall-classrooms-playground* architecture and supporting, controlling furniture.

The well-being model presented in Chapter 1 revealed that well-being is socially derived and argued that the possibilities of a child’s well-being in this social context are likely to be determined culturally. In a school context, this appears manifest itself in the denial of recognised benefits of movement and physical activity in learning (Wood, 1998), an argument reinforced by the rejection of open plan.

Furthermore it is apparent that Victorian social and economic aspirations for schools were not at odds yet, today, they appear to be: children are expected to think differently but not to behave differently. The economy is arguably pulling children away from some of the traditional constraints of school, although possibly still in a homogenous way, but societal demands and school culture continues to draw them back to controlled behaviour in which the social and physical aspects of well-being are constrained. The synchronicity required between achievement and acceptable behaviour additionally leads to the suggestion that behaviour in a mainstream school will have a strong bearing on the possibilities of the curriculum and perhaps even result in children perceiving their achievement at school in behavioural terms.

The seemingly retrograde aspects of socialisation and organisation are arguably inconsistent with the aspirational motives of design and the broader context of Education remains largely unspoken in new designs. It is necessary therefore that this cultural context be investigated in order to find ways to create cultures and supporting environments which broaden the possibilities of a child’s well-being.

Additionally there is an indication that the primary focus on architecture may have been overemphasised. The relationship between architecture and the other elements of the physical school therefore needs to be considered in relation to the whole school.

Chapter 3: Well-being at school - Children's views

3.1 Introduction

Chapter 1 and Chapter 2 reviewed school design using two different approaches and broadly arrived at very similar conclusions. Either by starting from a psychological perspective and applying the conclusions to design, or vice versa, the thesis observes the physical environment and indeed the practice of mainstream primary schools to be subject to a strong cultural tradition; Chapter 2 identified this as deriving largely from the Victorian era. In turn, the relationship between a child's well-being and their physical school would appear to be directed by this prevailing culture.

Therefore, while well-being can be considered to be fundamentally socially derived, it is predicted that the nature of school culture guides how it is sensed. This is loosely related to the child's future ability to operate within society and within the economy but arguably more directly related to the needs of school organisation and the meeting of targets. In this way well-being logically appears to be guided towards concerns of behaviour and achievement.

This can be viewed as the overlaying of subjectivity on the well-being model. Although the well-being model provides a valuable tool with which to engage a school in debate about its environment, alone it does not provide the subjective context relating to its children and its culture with which to approach design in an informed way. How, for example, is a child's physical expression perceived and what is acceptable or unacceptable in the course of a school day? This understanding certainly affects how effective design will be approached and equally how design might facilitate cultural change. Furthermore, it is possible that in reality this subjectivity not only limits the physical environment but also restricts the evolution of the curriculum; efforts towards personalised learning, discussed previously, appear to increasingly infringe on perceived wisdom relating to behaviour.

To further develop an understanding of how culture guides the child's sense of well-being towards fulfilling societal, economic and organisational ends, the exploration of well-being in respect to the psychological reality of schools and its setting is the further challenge of this and subsequent chapters.

Conspicuously, the debate offered in this thesis so far, while discussing children at length, has been wholly informed by adults. In developing an understanding of child-centred schools it is not

enough for children to be central to the discussion; they must, as Burke & Grosvenor (2003) contend, be involved, particularly if children's individuality is to be recognised. The conversation with Christopher at School B in

Figure 3-1 illustrates a child's perspective which is unpredictable and it would seem therefore that it should not be assumed.

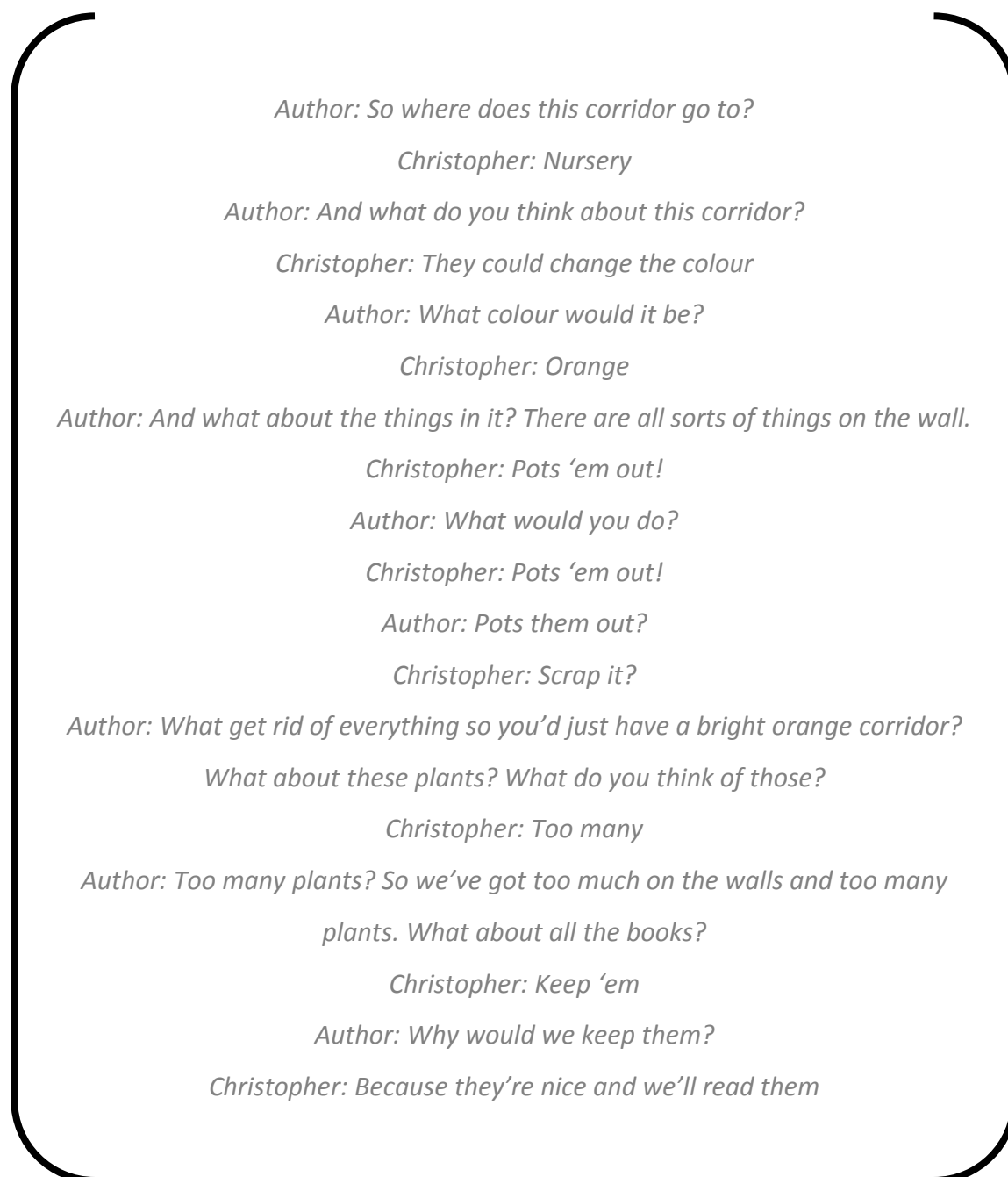


Figure 3-1 A conversation with Christopher at School B

There is a voiced consensus of opinion in school design that children need to be consulted about their physical environment (Clark, 2005; Dudek, 2005; Burke & Grosvenor, 2003). As the design philosophy errs towards the individualised conception of the child-centred school, then understanding the individual child, intuitively, can be viewed as essential. Dudek suggests that 'children need to be observed and listened to in order for their priorities to be understood (2005, p.vii).' With this approach, Clark (2005) maintains that a much more child-centred architecture can be achieved by acknowledging the child's perspective. In other words, '.... children have their own activities and their own time and their own space (Qvortrup, Bardy, Sgritta & Wintersberger, 1994).'

Design research has an important contribution to make. In practice school architects often complain that their ability to involve children in the design process is compromised by budgets and timescales which, it is argued, can 'limit the quality of the environment, and make it less suitable for young children (Clark, 2005, p.1).' Similarly Burke (2006) points out that, 'Children occupy and respond to designed spaces, often without choice while they are rarely involved in decision making about the visual and material conditions that surround them (p.1).'

Despite an unremarkable contribution to date, research should be informing this gap which architects do not necessarily have the time or resources to bridge.

Chapter 3 begins the primary investigation of this thesis by considering what a child-centred school might consist of from the perspective of the child, using the well-being model as a starting reference point. In Chapter 1 the manifestation of well-being, although a complex construct, was described in fairly simple terms of contentment (Veenhoven, 1991; Royo, 2007). Therefore, extending this principle, this chapter asks what children consciously think makes them feel good, or happy, at school and whether they naturally and of their own volition cite aspects of the physical school, whether places or objects, as contributory to their sense of well-being.

3.1.1 The schools involved

The research was carried out in two primary schools: School S in Southampton and School A near Andover, profiled in Appendix 4. The findings are supplemented by observational research carried out in School B in Birmingham.

3.1.2 Ethics

The research activity described in this chapter was sanctioned by the Creativity & Culture Ethics Committee at Bucks New University. Additionally, parents' consent for their children to take part

and for photographs to be taken of the process was gained in advance of the research (See Appendix 5). Cohen et al. (2000) describe the importance of *non-maleficence* which means that no physical or psychological harm should come to the participant as a result of the research, placing the well-being of the children, in this case, above the research aims. This was strictly adhered to although, in practice, the studies described in this chapter were not considered to be potentially harmful to the children and there were no objections to participation.

These studies were chosen as introductory studies which would reveal the nature of perceived well-being and attachment in schools, but also as a means of developing trust with both the children and the adults (teachers and learning assistants). In reality it was feasible that the adults might feel most sensitive or defensive about the children's reports describing good and bad days. For this reason, building a trusting relationship with the adults was also very important. It was decided that two days should be spent supporting each class prior to the studies in order to gain trust.

3.2 Study 1: Good day, bad day

3.2.1 Aim

The concept of having good days and bad days is a familiar conversation point. Whether it is in relation to work, school or leisure, people will generally be able to offer reasoning as to the factors they feel have contributed. Chapter 1 maintained that design predominantly contributes to well-being by repeatedly influencing children's daily experiences and so discovering children's perspectives on good and bad days at school is a natural start to the primary research process.

The aim of the *Good Day Bad Day* study was to reveal the nature of children's awareness of their own well-being and, potentially, common patterns in the way children in two different schools perceive well-being. It was also expected that, through this enquiry, the subjective school would be exposed in relation to factors like gender, age, socio-economic background, relationships and school culture, for example.

It has been put forward that well-being is greatly influenced by the child's social world and that the school will determine, to an extent, the functioning of this social world. Chapter 2 also predicted the importance of what is considered to be good behaviour and achievement and how the environment reflects this; the aim is to ascertain the reality of this prediction and more generally to understand children's perspectives on how the ethos of the school affects their daily experience.

The study does not explicitly investigate the relationship between well-being and the physical school; such research will be carried out in Chapter 4 onwards. However, it is of interest to see whether children, unprompted, make any connection with the physical school, or if any relationship is implied. Certainly reports about behaviour can often be directly related to the environment in which the behaviour takes place, as Zeisel (2006) argues.

3.2.2 Methodology

Chapter 1 explained that the quantitative research methods used to study specific aspects of a child's experience at school were limited in providing a consistent and cohesive understanding. The study in this chapter is qualitative, using content analysis (Krippendorff, 2004) to interpret children's perspectives on their well-being. Photo elicitation is used to stimulate children's responses (Harper, 2002).

Qualitative methods are generally chosen in order to investigate the individual and their uniqueness (Cohen et al., 2000) which it is predicted will reveal something of the relationship between individualisation/personalisation and socialisation in school.

So far well-being has been described as a complex concept and investigating it with primary age children presents important issues of language and method (Breakwell, 2006). Michalos (2007) asserts the manifestation of well-being can be simplified to feelings of happiness or contentment and investigating happiness is a useful approach to apply with children to indicate more complex holistic feelings of life satisfaction and contentment (Woodill et al., 1994).

In this chapter the concept of well-being is therefore investigated in relation to children's reports of feeling happy or unhappy at school. Children were presented with an image of a character leaving their school and were asked to tell the character's story. The character was a cartoon character and was deliberately androgynous to avoid children assigning a gender and potentially disengaging from the character. It was predicted that the children would typically attribute their own feelings and experience to the character.

The use of imagery rather than verbal or written explanation was chosen so that the children were not led to conclusions prior to starting the activity, although it was necessary to identify the scenario depicted in the image.

The storytelling was in the form of a drawing or writing. Robinson (1994), for example, identifies the use of children's accounts in the form of pictures or stories to be highly valuable. This

supports Clark (2005) who maintains that offering children a variety of ways to contribute is important although it is recognised that, despite the options, this study operated within the confines of an A4 paper-based task.

The study was incorporated into a normal class activity within the classroom. Neither the method used nor the balance between writing and drawing was prescribed to the teacher who was introducing the study to allow for any culturally specific approaches to prevail.

While it is recognised that the classroom approach carries an inherent risk of children influencing each other and adults influencing the children, it was preferred to the *one-to-one* alternative. A class study, introduced and facilitated by the class teacher, meant that the study was less likely to be considered unusual by the children. The instruction could also be consistent. In a one-to-one scenario the situation may have been inhibiting for some, particularly carried out with an adult whom the children were less familiar with. The time factor related to completing what was considered an introductory study with 104 children was also deemed prohibitive and potentially unnecessarily disruptive to the class.

3.2.2.1 Participants

The study was carried out with children from two classes in School S and School A. In School S the classes were a Year 1/2 class (the Pandas) and a Year 5 class (the Barracudas). In School A a Year 1/2 class (the Turtles) and a Year 5/6 class (Class 3) took part. In total 104 children were involved.

3.2.2.2 Standardised instructions

The study was carried out as a classroom exercise led by the teacher. In Part 1, the children were shown an image on their interactive whiteboard of an elated cartoon character leaving their school (See Figure 3-2). The school in the background of this image was changed according to which school the children attended. The mood of the character was discussed with the children as a group to ensure it was understood that the character was leaving school at the end of a day and was happy. It was also clarified that the happy character had had a good day at school. The children were then asked to 'tell' the story of the character's day by means of writing or drawing.

The children were given a piece of paper (A4 or A5) and access to normal and coloured pencils. They were allowed approximately 20-25 minutes to complete the task.

Once the *Good Day* part had been completed, the children were collectively shown the image of the dejected cartoon character leaving their school (See Figure 3-3) and were asked to tell the character's *Bad Day* story in exactly the same way.



Figure 3-2 A good day at School A



Figure 3-3 A bad day at School A

3.2.2.3 Evaluation of the responses and presentation of results

A content analysis approach was applied to evaluate the responses. In both schools it was observed that these responses typically covered a variety of different reasons why the character had experienced a good or a bad day. These reasons were often only loosely related to one another and were sometimes entirely unrelated. For this reason each reference to a contributory factor was recorded under a relevant heading, like *achievement* or *play* for example, rather than trying to summarise the overall point of the child's work. Each factor was treated equally and the results are presented as the number of references within each category as a percentage of the total number of references made.

The findings of the study are presented by school and by class, in each showing a table giving the percentage of reasons for a good or bad day which fall within certain categories.

3.2.3 Children's responses

3.2.3.1 School A

3.2.3.1.1 A good day at school - Year 1 & 2 Turtles

Table 3-1 illustrates the highest ranked categories based on the references made by the Turtle children. The first four categories, which all relate to success in learning, represent over 45% of all references made by the children to a good day at school.

These rankings reveal that the Turtles' reasoning is strongly directed towards the achievement culture of the school and within this culture it is clear that the children allocate importance to accompanying recognition and reward.

The remaining categories are less significant although combining *Play*, *Friends*, and *Helping others*, which are all indicators of the social nature of the school, accounts for approximately 16% of all references.

A smaller number of references were made directly to the physical environment of the school, namely the tables and the carpet area in the classroom. These were referred to as places in which the children enjoyed learning and so, additionally, by association were linked to the learning culture of the school.

| Rank | % | Category |
|------|-------|--------------------|
| 1 | 14.1% | Achievement |
| 2 | 12.5% | Reward |
| 3 | 10.9% | Recognition |
| 4 | 9.4% | Particular lessons |
| 5 | 6.3% | Drawing |
| | | Table |
| | | Play |
| 8 | 4.7% | Friends |
| | | Floor/carpet |
| | | Helping others |

Table 3-1 A good day at School A Year 1 & 2

The responses of the children yielded a valuable source of anecdotal evidence in support of these findings. For example, referring to her sums, Samantha says ‘Miss March tikt them and she got them all right.’ Similarly Natasha writes that ‘the techer sead well don the techer was very proud.’ Both comments imply the role that the teacher plays in a good day.

Daniel also suggests how the judgments of the teacher may have a determining effect on whether the character has had a good day. His character has had a good day as a result of being, ‘*star of the day*’ because he did maths and was very good.’ The *star of the day* is the Turtle child who has worked, achieved or behaved particularly well that day and is chosen by the teacher or learning assistant in the class.

Maria also refers to the recognition of achievement, writing about a good piece of work which was ‘put upon the wall.’ Once again it is the teacher who will decide whether a piece of work is good and its appearance on the wall will indicate to the child that they have done well.

While nearly half of all references refer to aspects of learning, of lesser importance in the list shown in Table 3-1 are references to play and interaction with friends. Gabriel mentions getting on well with other children whilst Cameron describes the character playing with a toy digger during which, ‘sum one came and playd with him.’

3.2.3.1.2 A bad day at school - Year 1 & 2 Turtles

... when he was doing sums another child was sitting by him and scribbled (scribbled) on his pes (piece) of papper (Samantha).

| Rank | % | Category |
|------|-----|---------------------|
| 1 | 17% | Children being mean |
| 2 | 14% | Getting hurt |
| | | Unfairness |
| 4 | 11% | Particular lessons |
| | | Doing work again |
| 6 | 6% | Possessions |
| | | Boys |
| | | Accidents |
| | | Ability |
| 10 | 3% | Reward |
| | | Girls |
| | | Older children |
| | | Bullying |

Table 3-2 A bad day at School A Year 1 & 2

Views of a bad day at school, shown in Table 3-2, reveal the significant influence of other children on the quality of a Turtle child's day. Many indicate a low level of interference which troubles them: 'he was dooing numeracy and two of the year 2 boys were distracting him;' Natasha refers to this negative influence associating it with older boys. The appearance of both boys and girls as reasons why a child may have a bad day indicates the significance of gender. In addition to this, Natasha's comments imply disquiet between the older boys and the rest of the class. This association will be exposed further in Chapter 5.

Children being mean contribute largely to a bad day at school. It is unclear at what age the distinction between being mean and bullying is evident but what is clear is that the Turtles' days can contain a degree of conflict.

He has had a bad day at school because sumwon had his car and shot it of the car mat and it broc to pesis and he toowd the teechr.

This sentiment from Harry, whilst suggesting the importance of possessions, illustrates the view that the teacher is seen as the arbitrator and regulating authority within the class. Notably therefore the children frequently refer to fairness in the way that the teacher deals with problems. For example the sense of injustice when the ‘offenders’ are not reprimanded is crucial: ‘so the taych (teacher) did (not) tel (any)one off at all (Oliver).’

The Turtles continue to reveal the influence of the teacher’s decisions on thoughts about good and bad days at school. For example, several responses indicated the anguish associated with having to do work again. Gabriel describes this affecting the character in question: ‘he has had a bad day at school because he acsadantle (accidentally) yoosd (used) the wrong side of his pencle (pencil). He tride to rub it out but it got credc (creased) up and he had to start it agin and he did not finish it. He had to catch up.’

Olivia reveals two connected fears which emerge in the commotion of the playground: the daunting prospect of bigger children and the daily occurrence of children hurting themselves. She describes an ‘owlder child ran in to him and he fell over.’

Returning to the example of Harry’s car being broken, there is a strong reference to the child’s possessions and this occurred in a small number of the responses. This is also related to the use of the Turtle as a motivation tool; the prospect of ‘owning’ the turtle, however short-lived, is an important consideration in children’s interaction with objects and their well-being.

3.2.3.1.3 A good day at school - Year 5 & 6 Class 3

I feel good when I come home from school if I recieve a compliment that makes me warm inside. I also feel good when I get a good score in a test because it feels like a great achievement. I also like it when I have all my favourite subjects in one day I feel good because I have fun. I feel good when i get a certificate or an award (Sarah).

The responses of Class 3 illustrated in Table 3-3 demonstrate a progression of the achievement culture which was evident with the younger Turtles. In particular, the reward of stickers or the turtle to take home has been replaced by a system of housepoints. In Class 3 housepoints lead to *credits* and *parties* and the winning of the housepoint cup by the house with the highest number of points.

| Rank | % | Category |
|------|-------|--------------------|
| 1 | 11.6% | Housepoints |
| 2 | 10.1% | Friends |
| 3 | 9.3% | Recognition |
| 4 | 8.5% | Particular Lessons |
| | | Achievement |
| 6 | 7.0% | Fun |
| 7 | 5.4% | Reward |
| 8 | 3.9% | Certificates |
| 9 | 3.1% | Tests |
| | | Playtime |
| | | Play |
| | | Told off |

Table 3-3 A good day at School A Year 5 & 6

Jake, mixing the character up with himself as many of the children did, celebrates the fact that ‘I got 14 teen house points and getting all my play times and smiling.’ He highlights the practice of reward for good behaviour and achievement and punishment for poor behaviour, like losing playtime. This balance between reward and punishment is also revealed by Benjamin who explains that the ‘child is coming out of school happy because he did perfect in school and he didn’t get told off’.

Such comments about a good day at school indicate the importance of a teacher’s judgments on how much the child enjoys their time at school. It is also clear that the criteria for these judgments are well understood. Recognition of ability emerges as a theme in the children’s conceptions of well-being. For example, Georgia explains that ‘a good day is when you move up a group in a subject,’ and Victoria, on her good day, explains that the ‘teacher said I was in a top group.’

Within this familiar mix of achievement, behaviour, recognition and reward, the importance of friends emerges more precisely than in the same study with the Turtles.

The greater complexity of the children’s relationships is illustrated in Harry’s comment that a good day is one where ‘his friends were nice to him.’ At this stage Harry’s social status is unclear

but reference to friends rather than less close children being nice appears to indicate insecurity within his friendships.

Although Robyn suggests that 'she got to use her new pens,' possessions and objects appear to a much lesser degree compared with the Turtles.

3.2.3.1.4 A bad day at school - Year 5 & 6 Class 3

I don't feel very good if the teacher shouts at me. I don't like it when my friends break up with me because I feel lonely. If somebody teases me or calls me names, I feel like I'm cold inside. If I have all my least favourite subjects in a day I don't feel good. I don't like it when somebody criticises my work, I don't feel good. This doesn't usually happen though (Sarah).

| Rank | % | Category |
|------|-----|---------------------|
| 1 | 13% | Friends |
| 2 | 11% | Housepoints |
| 3 | 8% | Particular lessons |
| | | Told Off |
| | | Getting hurt |
| | | Falling out |
| | | Children being mean |
| | | Headteacher |
| 9 | 4% | Unfairness |
| | | Punishment |

Table 3-4 A bad day at School A Year 5 & 6

In Table 3-4, significantly, a bad day for Class 3 centres on the same factors as a good day, but describes opposing scenarios. In this case a bad day mostly involves falling out with friends and losing housepoints. Social and behavioural aspects of a school day take precedence in Class 3's evaluations.

The appearance of the headteacher in the list of contributors to a bad day illustrates her perceived role as the ultimate authority in the school with regards to behaviour and discipline and perhaps an increased tension with authority as the children get older.

Getting hurt is a continuing theme and illustrates that it is not only related to the smallest children in the school. Rather, it is testament to the highly energetic and physically interactive lives that children of all ages generally lead.

3.2.3.2 School S

3.2.3.2.1 A good day at school - Year 1 & 2 Pandas

In comparison with the Turtles at School A, the School S Pandas paint a very different picture of a good day at school. While the written study at School A provided some useful commentary, the drawing and narrative alternative at School S offered the opportunity for interpretation of images beyond the written word (Robinson, 1994).

As an example Kayleigh depicts a good and a bad day in Figure 3-4 and Figure 3-5 without using any narrative. The good day portrays two happy girls who are clearly friends. On a bad day however, the presence of the boy behind the two crying girls appears significant. The connection, seemingly beyond coincidence, infers that boys are responsible for spoiling good days.



Figure 3-4 A good day at school - Kayleigh



Figure 3-5 A bad day at school - Kayleigh

Achievement is low down on the list of contributing factors. Although Lewis does suggest that the character 'did a lot of work,' he is an exception. References made to achievement were on the whole non-academic, particularly connected with sport. In contrast, the importance of play, friends and football to these children dominates.

In light of the School A results, although stickers were used within the class to recognise achievement and behaviour, it is striking that they were not mentioned or represented in this study. Furthermore, Manfred, the Pandas' soft toy equivalent to the turtle did not appear in relation to good days for these children. In contrast, Katie refers to the character being happy 'because he drew a lovely picture,' and it is noticeable that the happiness appears to be derived from the act of drawing as opposed to the drawing being recognised and rewarded.

| Rank | % | Category |
|------|-------|--------------------|
| 1 | 14.6% | Friends |
| | | Football |
| | | Play |
| 4 | 9.8% | Drawing |
| | | Playground |
| 6 | 7.3% | Sports |
| | | Parents |
| 8 | 4.9% | Out of school |
| | | Achievement |
| 10 | 2.4% | Particular lessons |

Table 3-5 A good day at School S Year 1 & 2

The social aspects of school figure highly in this study, as Table 3-5 reveals. This is implied in play and explicit in the children's references to friends. The study exposes the nature of this social interaction: David mentions that on a good day 'everybody lets me play with them.' Whilst this is probably a reflection of David's self-esteem, and is consistent with Harry in School A, more generally it is a reminder that, in a child's code of conduct, play and inclusion often require permission from other children.

Unlike School A, in some instances children reveal elements of their lives outside of school, particularly fears. Michael, whom it surfaces through later conversations, is worried about his mother and father arguing, reveals that on a good day at school his mum and dad kissed in the morning: 'Mum dad cissd.' Eleanor mentions that she is able to see her mum at pre-school.

3.2.3.2.2 A bad day at school - Year 1 & 2 Pandas

The most significant factor in a bad day for the School A Turtles was children being mean to each other. As Table 3-6 shows, this is important for the School S Pandas too but, far more important, was whether the children were getting on well with their friends. These are closely related but at the same time different. Having highlighted the importance of friends and play to a good day in what would seem a very social environment, it would appear that social difficulties are highly influential on feelings of unhappiness.

| Rank | % | Category |
|------|-----|-----------------------------|
| 1 | 21% | Friends |
| 2 | 18% | Raining |
| 3 | 11% | Children being mean |
| 4 | 7% | Getting hurt |
| | | (Unable to) play |
| 6 | 4% | Particular lessons |
| | | Too hot |
| | | Playground |
| | | Dislikes school |
| | | Not allowed to do something |
| | | Boys |
| | | Want to be at home |
| | | Bullying |
| | | Boredom |

Table 3-6 A bad day at School S Year 1 & 2

While feelings of inclusion were important, as Figure 3-6 conveys, a theme which differs between the two Year 1/2 classes at the schools is the occasional reference to bullying made at School S. This was rare terminology for both age groups at School A.

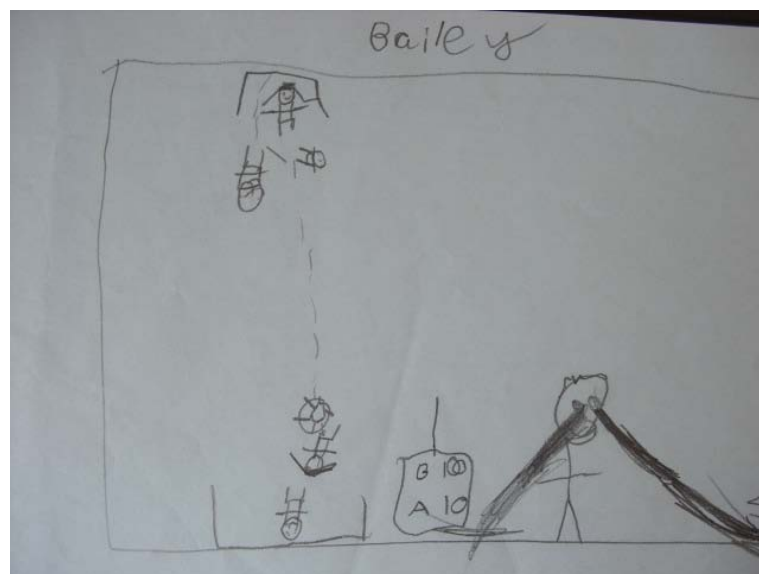


Figure 3-6 Not being allowed to play - School S

Another factor which did not emerge at School A was the recurrence of rain and bad weather as a theme, depicted in one of the drawings shown in Figure 3-7; the logical explanation is that bad weather is linked to children being unable to play at playtime and lunchtime but it is common for teachers to cite the effect of weather on children's moods and behaviour despite, as Moore (1999) indicates, lack of research.



Figure 3-7 Bad weather, bad day - School S

Notably the only references made to the academic school are those which relate to lessons which the children do not like. For instance, Katie mentions that the character is sad 'because he had numeracy.'

3.2.3.2.3 A good day at school - Year 5 Barracudas

The consistent themes revealed between the younger and the older classes at School A emphasised a common cultural link of achievement, recognition and reward. A common cultural link is also evident in the responses at School S shown in Table 3-7: the Barracudas' most cited reason for having a good day is positive interaction with friends. Although favourite lessons were mentioned by the children, references to achievement and learning were once more minimal.

| Rank | % | Category |
|------|-------|--------------------|
| 1 | 17.9% | Friends |
| 2 | 10.7% | Football |
| | | Fun |
| 4 | 8.9% | Sports |
| 5 | 7.1% | Technology |
| | | Lunchtime |
| 7 | 5.4% | Study |
| | | Particular lessons |
| | | Bench ball |
| | | Play |

Table 3-7 A good day at School S Year 5

The consistent themes revealed between the younger and the older classes at School A emphasised a common cultural link of achievement, recognition and reward. A common cultural link is also evident in the responses at School S: the Barracudas' most cited reason for having a good day is positive interaction with friends. Although favourite lessons were mentioned by the children, references to achievement and learning were once more minimal.

This picture supports the assertion of the headteacher of a low aspirational intake in which parents generally do not place a great deal of importance on their child's academic achievement. Of note are the things which Matthew says contribute to a good day and the underlying message that he wants the day to pass more quickly. He says 'I like laptops because it makes the time go quicker,' and 'I like tag because it helps make the day go quicker.'

Kelly mentions a game which seems to be a strong favourite with the class and is played in the school hall using benches. She says 'I like bench ball because you play with your friends and it is very very fun!!!' Sally also mentions the importance of friends: 'what makes a good day for me is when I get to hang around with all my best friends!'

The children are much more specific about who their best friends are compared with School A Year 5/6 and the younger School S Pandas. The responses are suggestive of some strong relationships. For instance Peter highlights that 'I love playing basketball with Jordan. It makes me happy,' and Ria refers to Leona and Sally who 'cheer me up when I feel blue or when I'm

upset/angry.’ These comments also demonstrate an emotional language and awareness which were generally absent in School A’s responses.

The Barracudas represent a continuation of the cultural picture conveyed by the Pandas and the existence of preferred lessons is the only reference to learning in the top ten factors contributing to a good day.

3.2.3.2.4 A bad day at school - Year 5 Barracudas

| Rank | % | Category |
|------|-----|----------------------|
| 1 | 28% | Particular lessons |
| 2 | 17% | Fighting |
| 3 | 11% | Learning |
| | | Children being mean |
| 5 | 6% | Friends |
| | | Misbehaving |
| | | Football |
| | | Bullying |
| | | Sitting for too long |
| | | Feeling alone |

Table 3-8 A bad day at School S Year 5

The most common reason for the Barracudas to have a bad day, illustrated in Table 3-8, was sitting through lessons which the children did not like: ‘unhappy when it’s a whole day of my worst lessons.’ At the same time Bethany complains about the amount of time they are made to sit. She represents the class’ apparent inclination towards physical activity in preference to more sedentary academic activity.

Fighting, which was entirely absent in the School A responses, is the second most important contributor to a bad day for the Barracudas. Oscar rues, ‘fighting makes me unhappy because that is not what I come for.’ Matthew mentions that he hates bullying ‘because it makes more people sad every day.’ And ‘people being nasty to other people’ is a particular problem for Emily.

The responses suggest a degree of antagonism in the class. Gavin, for example, is not happy when 'people throw stuff at me and wind me up.' The study appears to expose the two sides of a social school.

3.2.4 Discussion

3.2.4.1 School culture

The *Good Day Bad Day* study endeavoured to draw conclusions about the constitution of a child's perceived well-being at school and to shed light on any link to the psychological and physical school environments, where it existed.

In general the responses from Year 1/2 children at School A would suggest that their sense of well-being is predominantly determined by perceptions of achievement and its associated reward. These perceptions, it seems, are determined primarily by the teacher who, arguably, personifies the school culture. The results infer that the children's senses of well-being illustrate a form of dependence on the authority and judgment of the teacher; children's reports of bad days relate noticeably to other children's behaviour and the way in which these situations are managed by the teacher.

Secondly there is a strong indication that children are being initiated into a school which places a high value on academic achievement. Psychologists argue that conditioning is required to make something occur that does not occur naturally, or to accelerate it (Hilgard, Marquis & Kimble, 1968). Although Piaget (1975) would say that the motivation to learn is innate in a child, it is doubtful whether a curriculum for innate learning would resemble the national curriculum. Therefore, in order to achieve nationally valued educational standards, it is also required to motivate the children towards these standards. The purists who contend that child-centred schools should be based upon the child's natural learning instinct would be disappointed by the use of stickers and housepoints but, as Skinner (2003) remarks, the consequences of behaviour determine the probability that the behaviour will occur again. As such the school culture embraces the principle of operant conditioning reflected strongly in the children's perceptions of good and bad days. Both the basic principles of Skinner (2003) and the social learning theory of Bandura (1977) are in force here.

In the older class, a similar allegiance to the achievement culture of the school is also evident and it would appear that the teacher's influence is no less important. One child mentions that the character 'could have made new friends because he did well in th(e) lessons,' which highlights

how the school culture can overlap with the child's social realm to determine his popularity with peers. This is investigated further in Chapter 5.

While it was noted that the well-being model is likely to be shaped by the subjective school, its underlying objective character strongly suggested the importance of the social school. The emergence of friends in Class 3's descriptions of good days is therefore likely to reveal a more accurate picture of natural childhood behaviour within what remains a culture focused on doing well at school.

By comparison, the School S children provide a quite different perspective on their well-being. For the Pandas, the younger class, a good day is reported as a union of friends, football, and play. The portrayal is of a school experience which is perceived to be explicitly social, and physical, in its nature. It is apparent that the society in which these and the older children operate is more self-determining than at School A. Conclusions based on this initial study would suggest that the teacher and other adult figures in the school were less influential in determining the child's sense of well-being and in framing of their social identities.

Figure 3-8 illustrates how children's reports at each school point towards different elements of well-being (shown in white) reflecting the subjective nature of the school culture and society. The overall distinction between the schools is important and would appear to be evidence of a difference in the role adults take in determining a child's well-being both in terms of directing them towards academic achievement and managing their social interaction. Superficially it appears to be a question of what is considered to be of value for the child's future well-being and, arguably, relates strongly to the perspective of the community the school is part of.

While School S works within the same national framework and their academic attainment is lower, Rousseau (2004) might argue that the responses are those of children in a more child-centred school. However, the children's reports from School S also indicate a more fractious social environment in which fighting, for example, emerges; in School A this was not mentioned. The stronger references to friends at School S may also indicate that, in a less controlled environment, children can be more discriminating and therefore less inclusive.

Children's references also imply a complicated social hierarchy; David, for example, referred to everyone allowing him to play with them implying that play is not necessarily the spontaneous inclusive activity many would like to think it is (Isenberg & Quisenberry, 2002).

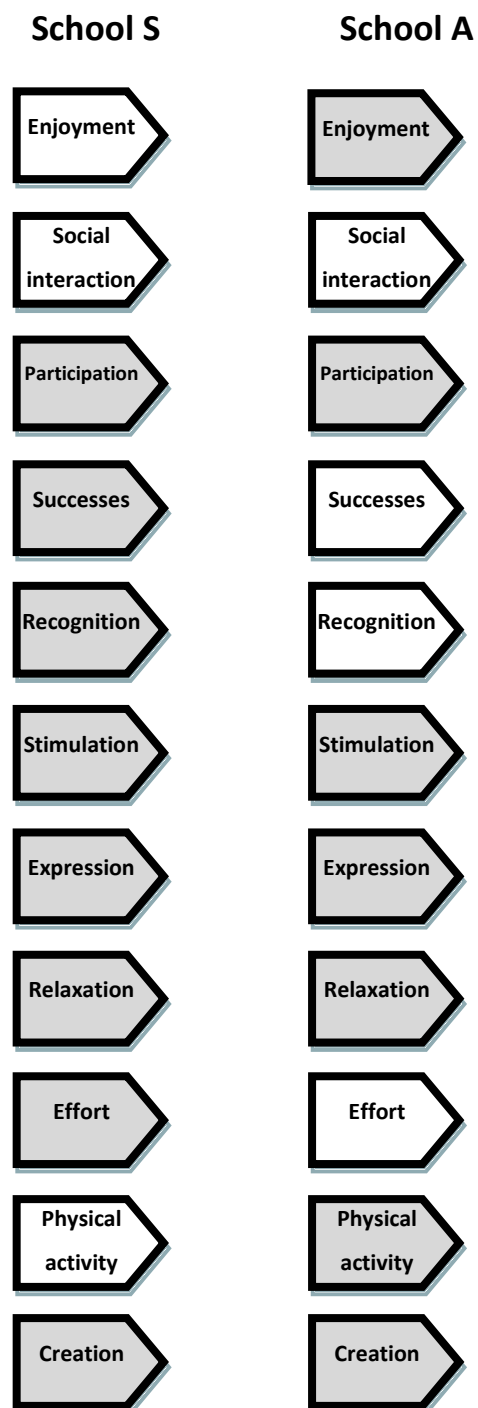


Figure 3-8 Contributors to well-being at school – Children's perspectives – School S and A

Furthermore, Figure 3-9 indicates a separate exercise which illustrates the different cultures in both schools and supports the assertion of a more intense social nature at School S; in this situation children expressed a need for power or strength from the school culture which they related to feeling safe.

Asked a series of questions about school and the animals which would be able to help or would make the child feel better, these were the Key Stage 2 differences between School A and School S. The size of the animal image represents the popularity of the choice.



Figure 3-9 An exercise investigating the supportive culture children wanted in school

3.2.4.2 The physical school

The connections which the children have made between their well-being and their physical school vary. In many cases there are no references at all whereas in others they are either direct or implied.

Chapter 2 focused mainly on the architectural debate which is where school design tends to reside but proposed that this debate gives secondary consideration to furniture and objects. The *Good Day Bad Day* study at School A, by revealing the influence of the teacher, indicates that more controllable elements like objects and communication may be more determining of a child's sense of well-being. At School S, on the other hand, the physical and social nature of the

children's existence implies that spaces rather than objects can be supportive of well-being if they enable this nature to be realised.

3.2.4.2.1 Objects and cultural appropriation

The study at School A, particularly, exposed how objects can be used to reinforce the school culture through conditioning.

In addition to recognition, the use of reward was a significant factor in class practice at School A. Although Samantha mentioned that she got all of her sums right, her direct reference to a good day is specifically about recognition and reward represented by a sticker: 'she has had a good day at school because she got a stiker for sums.' Beth also illustrates the culture of linking achievement to reward by referring to the character's counting ability. Beth writes, 'she went up to one hundred and got a ster (star) for dooing excellent work and she got the turtle and she was star of the day.' The turtle is the soft toy which children are able to take home with them when they are awarded *star of the day*.

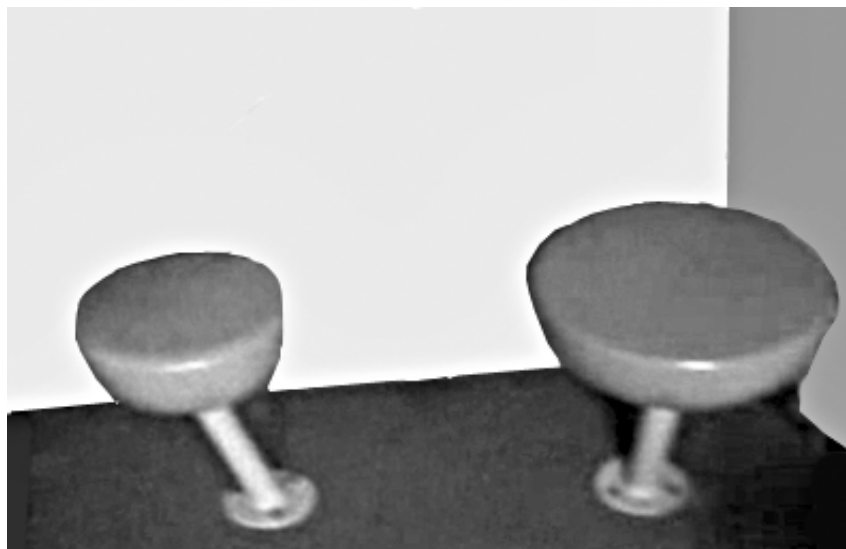
Explicit comments about the turtle uncover a relationship between the children and objects within school. Alone, a stuffed toy is renowned for its appeal to children, certainly in western cultures; Lehman, Holtz & Aikey (1995) describe attachment which is apparent from an early age in self-soothing processes. On top of its natural appeal, the toy in the School A example has been imbued with greater significance through its deliberate association with achievement and the teacher's pleasure; achievement which will make the teacher 'very proud.' This indicates how an achievement culture is supported and given identity by objects and how objects which are ostensibly the children's can be appropriated by adults.

Class 3 at School A does not use stickers and does not have a *star of the day*. Instead the recognition and reward culture is embodied in the housepoint cup which approaches recognition and reward on a competitive group basis. Achievement and good behaviour is rewarded or poor behaviour is punished with the risk of either helping or letting down friends in the pursuit of a common goal. This is also an example of how culture, via the deliberate formation of groups, may influence a child's social interaction.

Take a misbehaving class – shouting will have no effect, threats of losing playtime go unheard and polite requests are scoffed by even the most mild mannered of five years but threaten to remove a housepoint and suddenly the only sound to be heard is that of faint, muffled sobs (Barbuti, 2006).

Returning to School B, Figure 3-10 illustrates a further example of appropriation and how the school culture may exert itself on the physical school, rather than the other way around. The Mushroom Heads, an example of furniture, is evidence that design is not immune to being instilled with symbolism and its use restricted. In this case a positive design process carried out in pursuit of what might be termed child-centred objectives was ultimately appropriated for the benefit of organisation, control and discipline.

The Mushroom Heads: The School B mushroom heads were created as part of a design project at the school working collaboratively with the children.



In a video exercise Alex reveals the significance of the mushroom heads:

..... and we've got mushroom heads, yeah we've got mushroom heads. Yes that's only if they've done bad behaviour. These are the mushroom heads for like when you're doing your shoelaces up or when you've been naughty or you need a rest.

Figure 3-10 School B mushroom heads - exertion of culture on design

3.2.4.2.2 Communication and displays

Maria, a School A turtle, referred to the display of her work in respect to feeling good at school. Wall displays, as described in Chapter 2, are a good example of how the physical school can be used to celebrate and reinforce the culture.

Typical however of each school being studied is the use of primary-coloured, bordered and backed displays. These are the tradition of English primary schools propagated by teacher-training and perpetuated by the (teacher's) expectations of the requirements of Ofsted, as one teacher revealed in School B. Alexander (2000) notes the relatively elaborate nature of displays in British and American schools. There is a consensus of opinion which identifies displays as having a positive effect on all members of the school and Maxwell (2000) and Killeen et al. (2003) suggest an increase in motivation. Equally however, while the displays provide a prevalent visual impact for the child, they are generally out of bounds from the point of view of touch and this again is observably a means of communication controlled by the teacher.

A display of work reflects back to the child what is considered to be good or what it is about the class' output which amounts to achievement. For the child, as Maxwell (2000) states, it is expected to instil pride and a sense of achievement. The policy visible in School B, particularly, is that all children's work is displayed as opposed to selected work, the intention being to promote a sense of communal achievement as opposed to promoting individuals at the expense of, or for the motivation of, others.

Whilst the three study schools were very similar in their approach, Alexander (2000) highlights an international cultural difference. This is clearly evident when considering the deliberate philosophy of the Italian Reggio Emilia schools of ordered, uncluttered displays and the use of subtle colours (Dudek, 2000). The Reggio Emilia philosophy embracing learning, child development and the physical environment is increasingly being used by educationalists and architects as a benchmark of quality for new schools in the UK and many architects, including Dudek (2000), support the 'clean line' and ordered visual impact which is characteristic. The study is not sufficiently detailed to make any conclusions about how children perceive order versus clutter and whether an agenda of tidiness of presentation also relates to socialisation.

An alternative interpretation is that the purpose of displays may even be mostly decorative and children's work is the most freely available wallpaper. In reality it is likely to be a combination of the two, but importantly displays represent another layer of the physical school and, unlike architecture for example, this layer is highly manageable for the school.

Finally, although Maria mentions the importance of having her work displayed, she does not make any reference to how it is displayed. This could be because it is a symbolic act and the importance is that it is deemed to be good.

3.2.4.2.3 Furniture

In both schools references to furniture were very limited. The Turtle children referred directly to tables and the carpet area (floor seating areas typically at the front of the class) as places which contribute to a good day at school. It would appear that these were included because the children associate positive feelings about their learning process with the location in which it is carried out. Reference to the carpet may be an indication that the architectural allocation of space is important to children, but the study only offers the opportunity for speculative interpretation. What is clear, however, is that there was no sign that the children were making aesthetic or functional judgments about either the carpet or the classroom tables.

From an ergonomic perspective, Bethany at School S, referred to the discomfort of sitting for too long. However, as argued in the light of comments made by the BCSE (2007), the design of the school chair cannot be wholly blamed and the organisation of the school day must be questioned in parallel. This directly relates to the assertion in Chapter 2 that the physical school supports a culture which generally prefers static children.

3.2.4.2.4 Physical spaces

Children referred to enjoying being in particular places. For example, in School A Robert mentions that 'he has had a good day at school because he was doing PE in the play ground.' Robert's comment shows how a child's relationship with places and objects is often through association. The activity and the place are as one because both are dependent on the other to exist, but the suggestion in this study is that the activity takes precedence.

It is possible that the limited physical environment at School A (See Appendix 4) influences the child's sense of well-being; the study results suggest the importance of activities in the classroom over and above activities elsewhere in the school. By contrast School S children refer most positively to their outdoor spaces and the spaces which are greenest and furthest away from the classroom. For School A children, although there is some mention of a sports field elsewhere in the village, this is not integral to the school and is not used for free and investigative as opposed to formal play in the way the School S children describe. There is also a relationship between available (green) space and the weather highlighted by School S children; the natural elements were not described by the children at School A. Having grassy areas available for play and sport as part of the school appears to make a perceptible difference to children's perceptions of well-being; certainly (Walters & Cohen, 2003) as part of their exemplar design discuss transforming the playground into an 'oasis of garden, seating and play areas.' As an introductory study, it is not

possible to be conclusive but there is some evidence that the limitations of the physical school are also directing the School A culture towards achievement.

3.2.4.2.5 Safety

Responses of children at both schools refer to getting hurt and there are some direct inferences in terms of design. BCSE notes that playgrounds, as well as corridors, are the locations where accidents tend to happen in school and recommend rubberised surfaces to minimise the damage and pain (BCSE & Morgan Ashurst, 2008). The prevalence of comments in this chapter about getting hurt indicates how important it is for children to feel safe but also describe a very physical, social existence. In the case of this thesis the BCSE viewpoint refers to what Chapter 1 described as the basics of school design. These are considered vitally important to allow the activity which causes the accidents to continue to take place but to meliorate the effects. Reflecting a purist perspective on child-centred schools, riskier activity, Kytä (2006) claims, should be allowed to take place.

3.2.4.3 The research process

The children's responses to an equivalent study in two schools were remarkably different. The overriding conclusion of the study is that children's perception of their own well-being is indeed subjective and highly dependent on the school culture and the community in which the school is located. However there are a number of issues relating to the *Good Day Bad Day* study which may have influenced the results.

The youngest children at each school were perceived to be at different stages in their learning development and the encouraged method of response reflected this. At School S, drawing was suggested and the children were asked to annotate their drawings to describe their thought process. It was clear that many of these annotations were written by the teacher or learning assistant in discussion with the child and therefore these interpretations were subject to a risk of misrepresentation or coercion.

While the Pandas at School S were encouraged to draw, at School A it was clearly signalled that writing was expected, determined by the layout of the A4 page they were provided. The necessary interpretation of drawings compared with the more literal reading of written material means that the results are not precisely comparable.

Despite the differences in the younger classes, the preferred method of response was consistent with the older children in their respective schools, whereby School S children drew and annotated

and School A children wrote. This suggests that rather than purely reflecting the academic stage which the children had reached, there is also an element of culture influencing the way children approach such an exercise.

Additionally, the way in which the study was administered was influenced by the usual classroom practice which forms part of this culture; in other words a study to reveal the effect of culture was in fact dependent on this culture. Therefore the way in which the activity was introduced to the class may have had a strong bearing on the results of the study at School A. Dean (2008) notes that it is common practice for teachers to set up an activity by discussing the subject with the children and clarifying exactly what it is that the child is expected to do. The process was more structured generally in School A and there is a suggestion that, particularly with the Turtles, the discussion was well developed before the children were left to expand their own ideas.

The benefit of the structured approach is that the children knew exactly what they were expected to do and a great deal more detail and explanation was received from the children in School A. The downside is that the preparatory discussion can preclude individual thought later on and can lead children towards certain subjects. The references to learning and achievement were surprisingly polarised across the two schools and it is feasible that this is partly the result of the way the study was introduced to the children.

The absence of play and friends from the majority of the Turtles' responses is a likely outcome of the class discussion and would cast some doubt over its validity as a study. Furthermore, the references to working at particular tables and on the carpet by the window would appear to have been ideas inculcated in the children based on the teacher's valid assessment of the author's wider research objectives. The prospect that children are merely reiterating the agenda of the teacher raises wider concerns about the development of individual thought and creativity but equally the difference between the results of the written compared with the drawn medium may suggest that writing may be seen as the territory of the teacher whereas drawing is not (Robinson, 1994).

Moreover the consistency of responses between the two classes in each school is significant. For that reason the outcome of the study is considered a fair reflection of children within a culture rather than of the specific approach of one particular teacher.

3.3 Summary

Chapter 3 began to introduce the thoughts of children to the research. In a discussion of what constitutes a child-centred school, evaluating children's perspectives on both their own well-being and the physical school must be considered obligatory.

Although reticent to make outright conclusions from the *Good Day Bad Day* Study, this chapter generally supports the predictions of Chapter 1 and 2 by suggesting that, to varying degrees, well-being is socially derived and directed by culture. The study showed that, despite differences between schools, children were highly consistent with the rest of their class and with other children in their own schools. The difference between schools was so significant that there is a strong basis on which to stress the pervasiveness of school culture on the children's perceptions of well-being. In fact the process of the study being directed by this cultural influence is further evidence of the cultural layering which the study sought to reveal.

Even at School A in which well-being appears to be directed strongly towards achievement, it is evident that this is achieved through the social mechanisms of reward and recognition. By contrast, in School S it is noticeable that the children sense their well-being in an explicitly social way which, although child-centred in the sense that it appears to be less determined by adults, invites criticism that the children's social environment is more discriminatory, fractious and perhaps less inclusive; an indication of mixed objectives being faced by schools.

The two schools therefore presented a very different cultural picture but it is important to ask why this cultural difference exists. Following the introduction of the National Curriculum in 1988 both schools are working within the same framework (Alexander, 2000) and, with its common expected levels of achievement, this can be largely discarded as a factor. It is most likely that the culture of the school is in fact derived by the children as a consequence of their socio-economic backgrounds, i.e. what constitutes a child's well-being at school is strongly related to the collective subjectivity of their family backgrounds. This reflects the assertions of Max-Neef et al. (1989) and leads to the observation that, despite the individual personalities and philosophies of the teachers, the school as a whole is dependent upon this context, going some way to explain the self-perpetuating nature of children's achievement which Dorling, Vickers, Thomas, Pritchard & Ballas (2008) have found within certain geographical areas.

The advocates of child-centred schools which focus more explicitly upon the views of children would assert that the school design and operation would look quite different from today and in fact would prompt *transformation* (Burke & Grosvenor, 2003). On this basis, with minimal

references to the social aspects of learning and school at School A, it could be argued that there is no apparent reason to design cooperative learning environments, for example, because their part in the well-being equation would appear limited. Rather, to enhance well-being at School A, the design should focus on supporting the teacher to deliver the curriculum and the child to learn successfully within these parameters. In fact child-centred can become teacher-centred by proxy and so the feelings of the child, perhaps, are irrelevant in this context. The voice of the child is necessarily superseded by the voice of the teacher and the designer is required to either accept teaching practice or design a school which deliberately challenges the teaching methods and enforces change, as open plan tried to do.

On the other hand, the design of a school based on the School S children's expressions of well-being would look quite different from that of School A. In fact whereas School A would focus on the classroom/learning spaces, School S would probably not have any. While this might be more in-keeping with the Danish outdoor schools, for example, which Bentsen et al. (2009) describe as impacting positively on health and well-being, it is mostly indicative of the value able to be placed on academic pursuits in school. If School S design reflects the low aspirations of the local community is the school failing those children by not encouraging academic achievement and social migration beyond the experience of their families? This refers to the extent to which manipulating a child's subjective well-being through educational practice, and design, is acceptable in a child-centred debate; Wilson (1976) notes the huge variability of what schools consider to be child-centred practice.

This study offers evidence that the desire for change in schools based upon children's views is most likely to perpetuate the current situation in which children demonstrate signs of being the product of their schools and of their communities. Qvortrup et al. (1994) argue that often children are not consulted because they are considered unreliable witnesses of their own lives and children are perhaps not as free as we would like to think; thought processes and logic may be inculcated as Vygotsky (1978) proposed. Accordingly evidence of individuality is found only within the context of the school's culture and therefore would appear to homogenise children rather than differentiate them.

Additionally, whether or not this study reveals a true or misleading portrayal of children's well-being and offers anything meaningful for design, it is also evident that direct references to the physical school are limited. Where references are made, these were not about architecture and relate more to aspects which have cultural or social significance. In fact it would appear that the elements of the school setting volunteered by children are those which either have, or are

consciously given, social and cultural value, like the class teddy bear or the display of children's work. As such this chapter has started to reveal the significance of association of places and things and elements of the physical school which the school culture can utilise; ideas which will be discussed further in Chapter 4.

Considering the range of physical elements in the school, architecture can be viewed as relatively inflexible and its direct impact more difficult to meliorate. However, when considering materials and objects, one can see how the culture of the school can more easily be asserted upon the design. Subsequent chapters will discuss the relationship between this range of elements existing in a school and also expose the tension between school design and use, a discussion previously initiated in Chapter 2.

Chapter 4: Asking children directly about their physical school environment

4.1 Introduction

Chapter 3 questioned children about their well-being by asking them what constitutes a good or a bad day at school. The assertion of the well-being model is that well-being is formed through a repetition of a child's positive or negative daily experiences within a social context. The chapter supported the view that the nature of school culture and practice significantly determines how children perceive their own well-being. The thesis also continues to highlight that, although a child-centred school is one focused on a child's well-being, the extent to which well-being should be determined and directed by the school on the child's behalf is a moot point (Wilson, 1976).

The Good Day Bad Day (GDBD) study did not overtly question the children about the physical school environment, although certain inferences could be made. These inferences particularly relate to the way in which certain elements of the physical school are appropriated by the culture and given value and meaning in order to direct children towards achievement objectives and behavioural norms; thus leading to the important consideration of *use* and of *association*. The chapter revealed that association of the physical environment with aspects of the school society and culture appears to be a significant factor in a child's relationship with inanimate places and objects.

The discussion so far has expressed a level of scepticism about the extent to which primary school children's opinions can realistically contribute to design which is considered *transformational*; a view which is linked to the argument presented in the previous chapter that children's perspectives are limited by the environments in which they find themselves. This broadly relates to Vygotsky's (1978) position that children are inducted into an existing culture in which the acquisition of language is especially influential. In this way, the research process is potentially hampered by the existing cultural and physical environment and the conscious thoughts of children are often expressed in language and logic which they are learning from adults. Getting to the child's voice is more difficult.

Despite concentrating so far on the influence of culture, this chapter seeks to begin to understand how children assert themselves with regard to the physical school and how they apply their own personal cultures. The chapter therefore asks children about favourite and least favourite places or things, aiming to evaluate the cultural direction of well-being, the significance of association,

and the existence of independent childhood cultures related to the physical school. This is including and beyond architecture and furniture in its scope.

This chapter concentrates on two studies investigating favourite and least favourite places or features at School S and School A. Two differing methods were used: a written and/or drawn study following the GDBD principle and a study at School A which replicated the Care & Chiles' (2006) balloons study, described later. These approaches inevitably produce more tangible results than Chapter 3 with typically conscious and reasoned responses. The benefit of this method is that it is almost impossible to conclude the studies without some perspective on the physical school.

4.2 Study 2: Favourite and least favourite place or feature

4.2.1 Methodology

The *Favourite and Least Favourite Place or Feature (FPF)* study asked the children to draw and write accounts of their favourite and least favourite places or things in school, carried out within the classroom. The method replicated the *GDBD* study described in Chapter 3.

4.2.2 Participants

The study was performed at School S and School A with all 104 children who took part in the *GDBD* study in Chapter 3.

4.2.3 Standardised instructions

The study was carried out as a classroom activity led by the teacher.

In Part 1 (Favourite Place or Feature), the teacher facilitated a discussion about favourite places and features outside of school, encouraging the children to think why they particularly liked these. Following the introductory discussion the children were then asked to think about their favourite places or things in school and, working individually, to describe them by means of writing or drawing. Mirroring the *GDBD* study, neither the method used nor the balance between writing and drawing was prescribed to the teacher.

The children were given a piece of paper (A4 or A5) and access to normal and coloured pencils. They were allowed approximately 20-25 minutes to complete the task.

Once Part 1 had been completed, a similarly structured discussion was carried out for the children's least favourite places and features, followed by the same amount of time for children to complete their drawings or writing.

4.2.4 Evaluation and presentation of the results

The output of the content analysis was expectedly similar to the *GDBD* study. However, in this case there were two sets of data available. Firstly the children identified their favourite or least favourite places or features and this information was compiled by ranking the choices by cumulative popularity or unpopularity. The percentage of the total responses on which this ranking was based was also shown. Secondly, the reasons given by children for making their choices were ranked in a separate table.

4.2.5 Findings

4.2.5.1 School S

4.2.5.1.1 Favourite place or feature –Year 1 & 2 Pandas



Figure 4-1 The importance of the outdoors - Shannon

Over half of the Pandas' responses are related to the outdoors. This specifically relates to the playground or the football field and also includes references to PE on the field and flowers, as described by Shannon in Figure 4-1. The results are shown in Table 4-1.

There are some examples, including the car mat and the dolls, which follow gender stereotypes but do not markedly influence the more conclusive results which are irrespective of gender.

Evaluating the results in Table 4-1 against the reasons given, offers greater clarity and insight into the choices the children made. In Table 4-2 it can be seen that the *unexplained* category is the leading reason for children's choice which is evidence that the study, once again, produced mainly drawn images and limited narrative. However, where reasons were given the heavy weighting towards play and fun followed by friends were evident in Figure 4-2 and consistent with GDBD.

| Rank | % | Place/Feature |
|------|-------|----------------|
| 1 | 26.1% | Playground |
| 2 | 21.7% | Football field |
| 3 | 8.7% | Dolls |
| 4 | 4.3% | Laptops |
| | | Flowers |
| | | Car mat |
| | | PE on field |
| | | Classroom |
| | | Outside |
| | | Wooden train |

Table 4-1 Favourite places or features - School S Year 1 & 2

| Rank | % | Reason |
|------|-----|--------------------|
| 1 | 39% | Unexplained |
| 2 | 30% | Play/Fun |
| 3 | 13% | Friends |
| 4 | 4% | Physical Positions |
| | | Achievement |
| | | Study/Sport |
| | | Feelings |

Table 4-2 Reasons for favourite places or features - School S Year 1 & 2



Figure 4-2 Depiction of friends in the playground - Leisha

Josh is quite specific about the friends who are integral to his enjoyment of his favourite place although he appears to link this with the opportunity for competition as much as it is linked to friendship. Achievement and winning are important elements of his comments: 'Patrick passes the ball and I score.' His drawing, shown in Figure 4-3, particularly demonstrates a perceived competition with Adam, perhaps illustrating the basis of his friendships and how he associates this with places.

In general, however, the Pandas' references to play and fun do not specify particular friends, implying an apparently inclusive nature to the class.

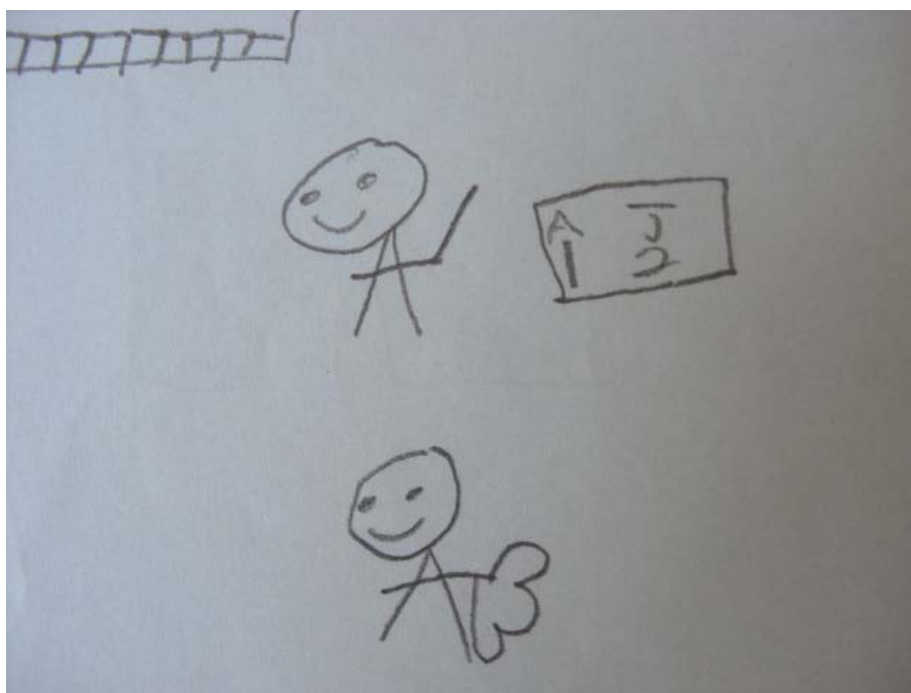


Figure 4-3 Competition and play in Josh's favourite place

4.2.5.1.2 Least favourite place or feature –Year 1 & 2 Pandas

Table 4-3 illustrates the Pandas' least favourite places and things, revealing a particular disinclination towards the assembly hall.

| Rank | % | Place/Feature |
|------|-------|--------------------|
| 1 | 34.8% | Assembly/hall |
| 2 | 13.0% | Football field |
| | | Classroom |
| 4 | 8.7% | Dinner hall |
| 5 | 4.3% | Playground |
| | | Role play area |
| | | Sitting |
| | | Ability group sign |
| | | Smart board |
| | | Music room |

Table 4-3 Least favourite places or features- School S Year 1 & 2

David, for example, says that assembly 'goes on and on' and, while Lewis suggests that 'it's really hot and you need a drink,' other children refer to the discomfort of sitting for a long time on the floor. Tanya's drawing (Figure 4-4) successfully sums up all of these sentiments, with the implication that the headteacher is the only one enjoying the occasion.



Figure 4-4 The assembly hall at School S - Tanya

Where children have explained their choices, and again many have not, the predominant reason given is not having fun, or being bored, followed by a lack of comfort. This is shown in Table 4-4. Apart from Adam's comments, who particularly dislikes drawing in the classroom because he finds it boring, these references were entirely related to the hall and assemblies.

| Rank | % | Reason |
|------|-------|-------------------------------|
| 1 | 43.5% | Unexplained |
| 2 | 30.4% | Play/Fun |
| 3 | 8.7% | Comfort/Softness/Warmth/Space |
| 4 | 4.3% | Quiet/Calm |
| | | Study/Sport |
| | | Quiet areas |
| | | People/Behaviour |

Table 4-4 Reasons for least favourite places or features - School S Year 1 & 2



Figure 4-5 Homework and ability group signs

Figure 4-5 also notes some of the more negative responses of the class relating to school work.

It is relevant to note that certain children have also referred to the playground and more specifically the football field as their least favourite places, indicating from the point of view of inclusion, that however emphatic the results at an individual level there is not always a consensus.

4.2.5.1.3 Favourite place or feature –Year 5 Barracudas



Figure 4-6 The outdoors – The Barracudas at School S

Over 70% of the Barracudas' responses relate to being outdoors (Table 4-5), either on the field or in the playground and the reasons given are generally linked to play and fun. (See Figure 4-6). Ben's outlook epitomises the straightforward view that many of the Barracudas express: 'I like the playground so I can talk and play games.' Rosie refers to mood by commenting that 'there are lots of places to be calm and you can sit down anywhere.'

| Rank | % | Place/Feature |
|------|-------|----------------|
| 1 | 43.6% | Football field |
| 2 | 17.9% | Playground |
| 3 | 12.8% | Outside |
| 4 | 5.1% | Classroom |
| | | Library |
| | | Den |
| | | Equipment shed |
| 8 | 2.6% | Art cabinet |
| | | Hexagon table |

Table 4-5 Favourite places or features - School S Year 5

Despite the overall clarity of responses there is a small proportion of the class who have indicated the classroom and the library as their favourite places mentioning learning and reading as reasons. The reasons are shown in Table 4-6.

| Rank | % | Reason |
|------|-----|-------------------------------|
| 1 | 28% | Play/Fun |
| 2 | 15% | Study/Sport |
| 3 | 13% | Friends |
| 4 | 8% | Quiet/Calm |
| | | Comfort/Softness/Warmth/Space |
| | | Learning/Reading |
| 7 | 5% | Achievement |
| | | Natural Elements |
| 9 | 3% | Freedom/Rules/Discipline |
| | | Conversation |
| | | Feelings |

Table 4-6 Reasons for favourite places or features - School S Year 5

Matthew specifically mentions the hexagon table and pertinently he describes it as somewhere to play around, indicating that objects change the use of the space in which they are located.

4.2.5.1.4 Least favourite place or feature –Year 5 Barracudas

Considering their least favourite places and things, Table 4-7 shows the Barracudas to demonstrate a reaction to authority and express a dislike of perceived sources of constraints and boredom in school. The reasons illustrated in Table 4-8 support this finding. The place most commonly referred to as least favourite is the headteacher's, office. Generally children's comments relate to not liking being told off. Ricky's drawing shown in Figure 4-7 clearly illustrates how he perceives the headteacher. 'My least favourite place is Mr S's office because I'm in there to(o) much.' And Bethany says 'most of the time you are getting tuled (told) off.'

| Rank | % | Place/Feature |
|------|-------|----------------------|
| 1 | 38.5% | Headteacher's office |
| 2 | 26.9% | Library |
| 3 | 11.5% | Gate |
| 4 | 7.7% | Playground |
| | | Music room |
| 6 | 3.8% | Assembly/hall |
| | | Classroom |

Table 4-7 Least favourite places or features - School S Year 5

| Rank | % | Reason |
|------|-------|-------------------------------|
| 1 | 26.9% | Play/Fun |
| | | Freedom/Rules/Discipline |
| 3 | 11.5% | Unexplained |
| 4 | 7.7% | Feelings |
| | | Desire to be Elsewhere |
| 6 | 3.8% | Comfort/Softness/Warmth/Space |
| | | Learning/Reading |
| | | Conversation |
| | | People/Behaviour |
| | | Hygiene/Cleanliness/Order |

Table 4-8 Reasons for least favourite places or features - School S Year 5

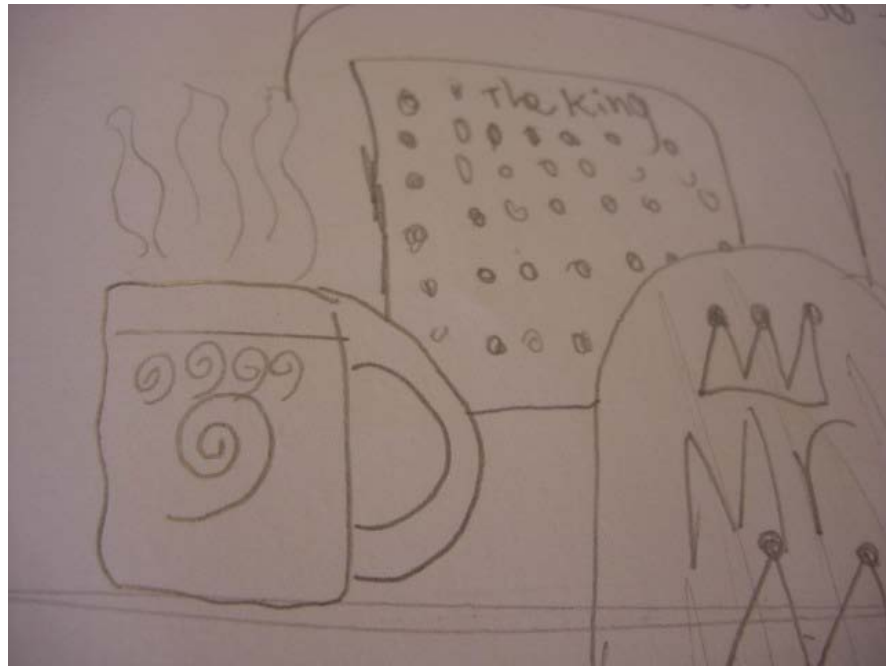


Figure 4-7 Portrayal of the headteacher's office - School S

The second least favourite place or feature is the library, illustrated in Figure 4-8. Rosie says, 'there isn't that much to do in there apart from read which I hate.' Sally, one of the most able children according to the class teacher, says 'my least favourite place is the library because I find it boring and dull and sometimes dark.' Here function and aesthetics appear to compound negative feelings towards learning. Ethan, on the other hand disagrees.

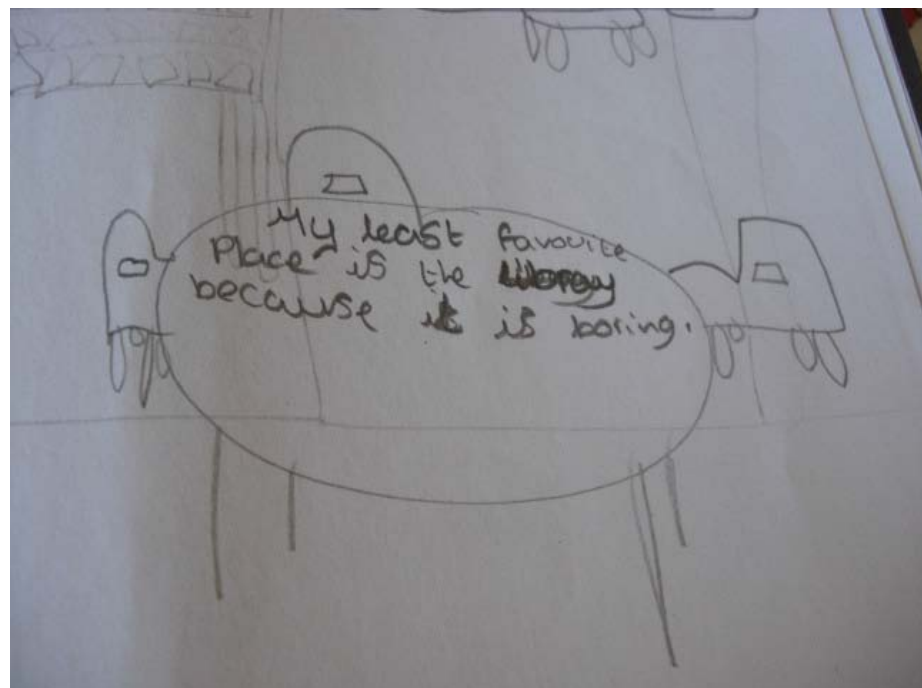


Figure 4-8 The library at School S

4.2.5.2 School A

4.2.5.2.1 Favourite place or feature –Year 1 & 2 Turtles

| Rank | % | Place/Feature |
|------|-------|----------------------|
| 1 | 31.6% | Playground |
| 2 | 10.5% | Markings |
| | | Play garden |
| | | Classroom |
| | | Toy shed |
| 6 | 7.9% | Building site |
| 7 | 5.3% | Step |
| | | Book corner |
| | | Star of the Day sign |
| 10 | 2.6% | Headteacher's office |

Table 4-9 Favourite places or features - School A Year 1 & 2

Unlike the Turtles' responses to the *GDBD* study, the enquiry into children's favourite places and features, shown in Table 4-9 reveals a more playful aspect to the class. In fact play, fun and friends are revealed to be the most significant reasons for children choosing their favourite places which predominantly comprise outdoor spaces (Table 4-10). This is in direct contrast with the findings of Chapter 3.

| Rank | % | Reason |
|------|-----|------------------------|
| 1 | 26% | Play/Fun |
| 2 | 13% | Friends |
| 3 | 11% | Colour/Patterns/Visual |
| 4 | 8% | Achievement |
| 5 | 5% | Quiet/Calm |
| | | Storage/Equipment |
| | | Study/Sport |

Table 4-10 Reasons for favourite places or features - School A Year 1 & 2

One particular aspect warranting its own heading is the playground markings which were very prominent in the Turtles' responses, pictured in Figure 4-9 and Figure 4-10. The level of detail exhibited in the drawings indicated an intimate knowledge and interactive relationship with these features of the playground, contributing to their sense of enjoyment and creation of games.



Figure 4-9 Playground markings - School A

Alexia talks about the circles on the playground and mentions colour, play and fun. Cameron, referring to the compass, describes playing football on it. There appears to be a level of interpretation and creativity applied to some of these simple additions.

Additionally, a somewhat accidental feature is described by James who highlights the step by the school office which he and Alex use as a base and invent games involving different parts of the masonry. This can be considered part of the *invisible* school, or at least invisible to adults, and which seems to be a critical source of imagination and creation for some. James was not the only one who chose the step which suggests that perhaps it has a more significant role in the child's world beyond its function. This feature is discussed further in Chapter 6.



Figure 4-10 Playground markings - the compass - School A

Two of the boys mention things which they like to look at, including Oliver who likes to look at the curtains and David who likes to look at the star of the day sign. The curtains may be stimulating, they may be relaxing or they may sustain daydreaming. For David, superficially it could be reasoned that looking at the star of the day sign is related to the award of the accolade but also, as the acknowledged artist in the class, the turtle may be a visually pleasing form for him. It does, however, indicate the importance of imagery in the overall material school.

Despite the evident shift away from learning in this study, the classroom remains a favourite place for some. Charles makes reference to age and learning when he chooses the Turtles classroom as his favourite place. He says 'I like doin hrd wrk (work) be couase we are older.' Perhaps this is a reiteration of a teacher's explanation of why the children are not able to play as often as they used to.

4.2.5.2.2 Least favourite place or feature –Year 1 & 2 Turtles

Table 4-11 reveals that the least favourite place according to the Turtles is the staffroom. Gabriel explains that he does not like white and he also thinks the building is dirty and boring. Samantha dislikes working in the staffroom because the chairs are too high, which is probably the product of limited opportunities for non-classroom learning space. The staffroom is a prominent building which sits in and overlooks the area of playground in which many of these children play.

More predictably the bins and the toilets are not popular with the Turtles. It is not surprising therefore that Table 4-12 shows that over a quarter of the reasons given for least favourite places are to do with hygiene, cleanliness and order. In particular, the words which the children use often refer to smell, indicating their sensory relationship with the physical school.

| Rank | % | Place/Feature |
|------|-------|----------------------|
| 1 | 20.7% | Staffroom |
| 2 | 17.2% | Bins |
| 3 | 13.8% | Toilet |
| | | Tables |
| 5 | 6.9% | Playground |
| | | Friendship bench |
| | | Carpet |
| | | Class 3 |
| 9 | 3.4% | Building site |
| | | Headteacher's office |

Table 4-11 Least favourite places or features - School A Year 1 & 2

| Rank | % | Reason |
|------|-------|-------------------------------|
| 1 | 25.8% | Hygiene/Cleanliness/Order |
| 2 | 16.1% | Learning/Reading |
| 3 | 12.9% | Furniture & Furnishings |
| 4 | 9.7% | Quiet/Calm |
| 5 | 6.5% | Comfort/Softness/Warmth/Space |
| | | Freedom/Rules/Discipline |
| | | People/Behaviour |
| 8 | 3.2% | Colour/Patterns/Visual |
| | | Play/Fun |
| | | Safe |
| | | Stimulation/Imagination |

Table 4-12 Reasons for least favourite places or features - School A Year 1 & 2

Illustrated in Figure 4-11, Daniel refers to associating the tables with hard work which he does not like doing and their occasional dirtiness does not improve things for him. However, Daniel does not mention the design of the tables or whether they are comfortable or uncomfortable to work at and it appears to be more to do with association. Alex agrees with him.

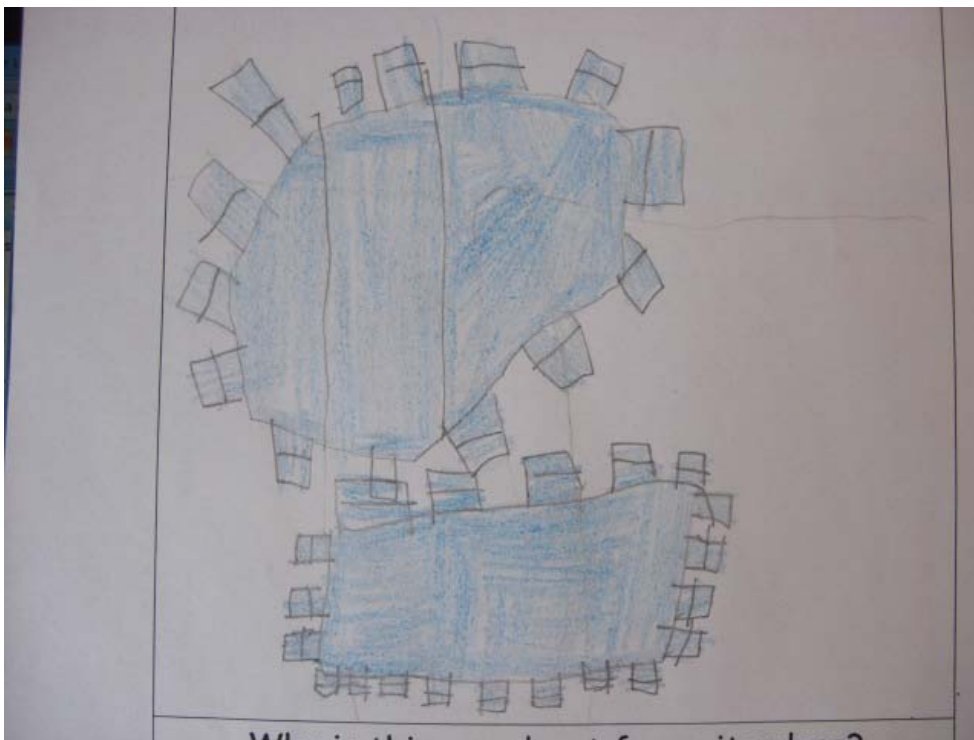


Figure 4-11 Least favourite place or feature - classroom tables - School A Year 1 & 2

The headteacher's office (Figure 4-12) appears in the list, as it did at School S, and the friendship bench which is self-explanatory in its symbolism is also mentioned as a least favourite place although the reasons given are not clear. This will be returned to in Chapter 5.

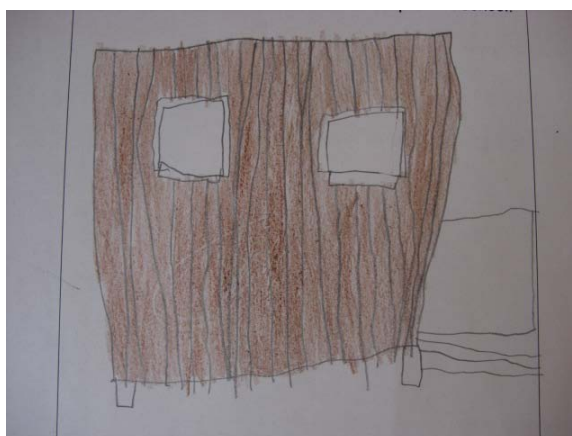


Figure 4-12 Headteacher's office at School A

4.2.5.2.3 Favourite place or feature –Year 5 & 6 Class 3

| Rank | % | Place/Feature |
|------|-------|-----------------------|
| 1 | 52.6% | Playground |
| 2 | 16.7% | Classroom |
| 3 | 10.3% | Friendship bench |
| 4 | 7.7% | Sports field |
| 5 | 5.1% | Markings |
| 6 | 2.6% | Shed |
| | | Badminton |
| 8 | 1.3% | Head teacher's office |
| | | Computer |
| 10 | 0.0% | Step |

Table 4-13 Favourite places or features - School A Year 5 & 6

Over half of the children in Class 3 indicate that the playground is their favourite place to be, with another large proportion talking specifically about features of the playground like the friendship bench and floor markings (See Table 4-13). This is consistent with the younger class and the drawings reveal a similar level of familiarity.

Unsurprisingly, in Table 4-14, the main reasons given are about play and fun shared with friends. Harry's explanation shown in Figure 4-13 supports this idea. In addition Lauren mentions the importance of natural elements by suggesting that 'I can play with my friends and get some fresh air.'

Nick also demonstrates that there is a rota for football which is a way of managing the limited space available but he seems comfortable with this arrangement. 'We play football at playtime if it is are (our) turn on the rota. If not we can just hang around.'

| Rank | % | Reasons |
|------|-----|-------------------------------|
| 1 | 24% | Play/Fun |
| | | Friends |
| 3 | 15% | Study/Sport |
| 4 | 5% | Comfort/Softness/Warmth/Space |
| | | Learning/Reading |
| 6 | 4% | Quiet/Calm |
| | | Storage Equipment |
| | | Quiet Areas |
| 9 | 3% | Relationships with Adults |
| | | Freedom/Rules/Discipline |
| | | Natural Elements |

Table 4-14 Reasons for favourite places or features - School A Year 5 & 6

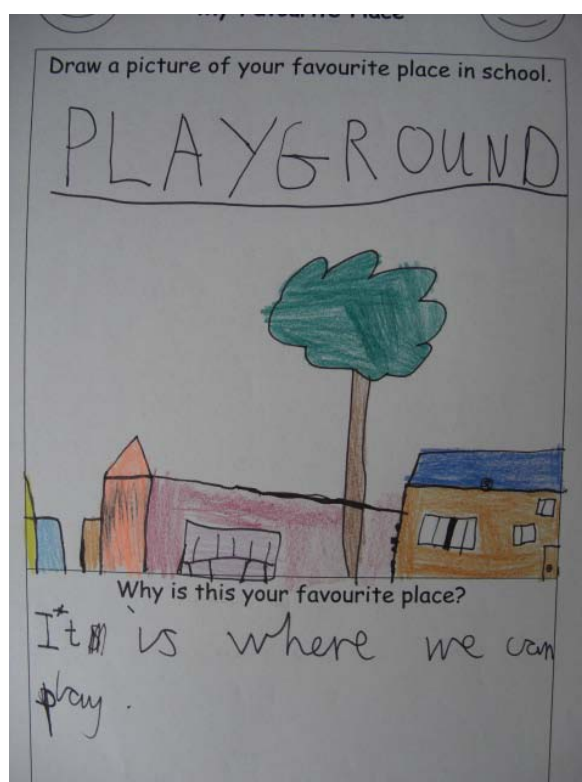


Figure 4-13 Straightforward rationale for choosing the playground - Harry

The friendship bench appears highly in this study for Class 3 although it only appeared in the list of least favourite features for the Turtles. This suggests that there could be a territorial element to its use, being the domain of the older children. Equally the step appears in the list of favourite places which it did for the Turtles but not quite so evidently in this case. Although both popular this may also imply age-related territory.

The *GDBD* portrayed a connection between children's well-being and learning and teachers, which is endorsed here by the popularity of the classroom and Melanie's depiction of this in Figure 4-14.



Figure 4-14 The teacher in the classroom - Melanie

Katy explains that 'the classroom is my favourite place because it allways feels like the sun is shing (shining) and Mrs Kissick is relly kind!' Melanie reasons that 'I love learning and also I feel safe.' While these girls suggest positive relationships within the classroom, Lewis on the other hand indicates a less social favourite feature which is also within the classroom. He likes 'surfing the net,' on the computer (Figure 4-15).



Figure 4-15 The classroom computer - Lewis

Finally a small number of comments match those of Kieren in School S; Peter's favourite feature is the gate because, he explains, 'when I see (it I) think of home.'

4.2.5.2.4 Least favourite place or feature –Year 5 & 6 Class 3



Figure 4-16 The toilets at School A

Shown in Table 4-15 and illustrated in Figure 4-16, the children's dislike of the toilets is emphatic and hygiene and cleanliness is the main reason given; 'it smells, it's dirty and people put poo on

the wall and wee on the floor.’ This is a common response of those illustrated in Table 4-16 from boys and girls and it appears that the toilets’ unpleasant smell is a particular problem.

| Rank | % | Place/Feature |
|------|-------|----------------------|
| 1 | 65.1% | Toilet |
| 2 | 11.6% | Cloakroom |
| 3 | 7.0% | Playground |
| 4 | 4.7% | Kitchen |
| | | Headteacher’s office |
| 6 | 2.3% | Equipment cupboard |
| | | Walk-in cupboard |
| | | Gate |

Table 4-15 Least favourite places or features - School A Year 5 & 6

| Rank | % | Reason |
|------|-------|-------------------------------|
| 1 | 46.5% | Hygiene/Cleanliness/Order |
| 2 | 20.9% | People/Behaviour |
| 3 | 7.0% | Comfort/Softness/Warmth/Space |
| 4 | 4.7% | Colour/Patterns/Visual |
| | | Safety |
| | | Freedom/Rules/Discipline |
| 7 | 2.3% | Friends |
| | | Furniture & furnishings |
| | | Feelings |
| | | Desire to be elsewhere |

Table 4-16 Reasons for least favourite places or features - School A Year 5 & 6

The cloakroom is also indicated and the reasons given include crowdedness and untidiness.



Figure 4-17 Unhappiness in the playground - School A

Whereas most children's favourite place was the playground, this is not the case for all children. Melanie does not enjoy being in the playground. She says that 'I don't feel safe and everyone is horrible.' Her drawing (Figure 4-17) tells the story and alludes to the second most common reason for choosing a least favourite place or feature which is to do with other children and their behaviour.

4.2.6 Discussion

4.2.6.1 The outdoors

The children in both schools have emphatically demonstrated the importance of the outdoors to their conscious thoughts of well-being. Kyttä (2006), investigating the relationship between children and outdoor space, refers to a body of work which maintains that free, spontaneous outdoor play promotes motor and social development and health.

This understanding is recognised by the Government, documenting the prospect of physical expression and study afforded by outdoor spaces and their contribution to health and good behaviour (DfES, 2007). However, even with the opportunities presented by the current replacement of schools, there is criticism that full advantage is not being taken (Beard, 2005) to fulfil the potential described by Kyttä (2006).

From the point of view of play, CABE (2002) proposes that well designed playgrounds will reduce the need for supervision. Certainly less harsh surfacing would assist those children who are concerned about falling and hurting themselves but the other aspect of visibility is perhaps misleading. Based on observations beyond the study schools it is unusual to find playgrounds which are not highly visible, empty, flat spaces.

However, a clear shift in emphasis to consider the outdoor space as part of the *informal curriculum* is evident in the design briefs (DfES, 2003b) but, as Chapter 2 identified, this is an example of design catching up with ideas which had not been established in previous schoolbuilding cycles.

There is also an inherent risk of appropriating the playground and fields, especially considering that many of the reasons the children gave were to do with negative feelings towards rules and a curtailment of freedom. With good intentions the contrived structuring of space for the purpose of attainment may ultimately adversely affect the child's well-being.

4.2.6.2 The library

The many references to the library at School S are an appropriate example of how culture combines with architecture, in this case negatively. While in a less academic culture, one might expect the library to be less popular, there is a suggestion that its location and demeanour compound its unpopularity.

Its location, set aside from the rest of the school, formalises reading. In School A and School B the library is an integral part of the main corridor. Keeping books in the corridor perhaps signifies that reading is visible and accessible and an essential part of the everyday activity of the school. However, in School B in Birmingham it is clear that the corridor affords limited options for enjoying the books and formalises the process of choosing a book and taking it elsewhere to read.

School S experiences the same issue. Additionally it is possible that Sally would prefer the library if it was less dark or more central to the school. Potentially its lack of appeal has a longer term effect on the popularity of reading but it is unclear from the research how much is to do with location and design and how much relates to school culture, the quality of the books or the attitude of the parents to reading, for example.

The majority of current designs presents an integrated rather than a separate library; School B indicates a certain process and control which is related to the improvised use of limited space.

Looking closer, the books also typically indicate achievement level with coloured stickers and the ordering of the books in folders feasibly associates reading firstly with ability and only secondly with enjoyment. This enjoyment may be derived, as a result, from comparison with others and, striving for a child-centred school, putting achievement in front of enjoyment is counter-productive based on the earlier discussion of the well-being model. In the current scenario controlling the reading process unnecessarily precludes the child taking responsibility for their reading and potentially becomes perceived as the teacher's agenda.

School A by contrast shoehorns a library into a very limited corridor space opposite the much loathed toilets, with a great opportunity for negative associations with reading. Based on observations in the study schools the book remains a fundamental material object in school, perhaps with the two even proving historically synonymous. It is evident that reading is becoming less and less paper-based but questioning the importance of books and libraries opens up a broader technological debate about the tangible school versus the virtual school.

The question seems to revolve around an enquiry of worth attached to physical material and the importance of haptic sense. Does the child having the physical book in hand add a perceived value to or even assist a child's reading? Conversely, does holding an old book which has seen better days devalue this process? How important is it for a child to touch, feel the words and run a finger across the pictures?

Gori, Del Viva, Sandini & Burr (2008) make it clear that the integration and coordination of touch and sight does not typically occur before the age of eight. This suggests that both senses need to be utilised in order for the child to experientially develop this integration and distinction. In a study of five year old children's reading progress Bara, Gentaz, Colé & Sprenger-Charolles (2004) illustrated that those using their fingers to understand the shape of the letters, alongside visual interpretation, made significantly more progress.

In many respects, these questions are central to a discussion about the material school and how it contributes to a child's well-being. Stimulation of the senses is central to the well-being model yet, as Chapter 2 points out, the sensory contribution of today's schools is generally limited. The observations about reading overall suggest that a primary school child's senses are somewhat blurred, although acute, and therefore the material fabric of the school can be used to aid such development.

4.2.6.3 Toilets

In Care & Chiles (2006) it is asserted that 'it is difficult to overcome the notoriety of school toilets. They are renowned problem areas in most schools; perceived as areas of misbehaviour, they are difficult to maintain and generally unpleasant (p.57).' They maintain that most children's least favourite place is the toilets, an assertion which is consistent with the results at School A.

The accounts of Care & Chiles (2006) and Burke & Grosvenor (2003) leave no doubt as to children's typical negativity towards school toilet facilities. The School A results emphatically substantiate this view. However, what is interesting is that there is no mention of toilets, either positive or negative, from the School S children. This may be a factor of cleanliness. However, it is likely to be significant that in School S there are separate toilets for the infants and the juniors whereas in School A toilets are shared.

4.2.6.4 Territory

The results of the favourite place study hinted at territory, particularly at School A with a suggestion that territory is based on age and gender. The accusation directed at teachers citing territorial behaviour (Bennett & Hyland, 1979) as a reason why open plan failed indicates that territories in school may be significant in the culture and relating to a child's well-being.

Relph (1976) identifies an inherent human need for association with significant places in which the need often manifests itself in territorial behaviour. Equally Sack (1986) explains that territory is considered to be fundamental in the organisation of human life and Altman & Chemers (1984, p.4) claim territories 'permit people to survive physically and psychologically and to conduct life's functions in an orderly and systematic way.'

According to Kintrea, Bannister, Pickering, Reid & Suzuki (2008, p.4), territorial behaviour is about control 'claimed by one group over a defined geographical area,' which is perceived to have value.

Altman & Chemers (1984) support the general importance of association by stressing that value is more to do with the resources contained within as opposed to the territories themselves. As a consequence of such perceived value, Kintrea et al. (2008) identify the resulting defence of territory which emerges when control is challenged. They refer to *super place attachment* which this study has also indicated for children.

Territory operates at many different levels of human organisation. Whereas, the interests of Kintrea et al. (2008) lie in the negative, and often criminal, expression of territorial behaviour in

youth, Altman & Chemers (1984) describe the typical and generally innocuous demonstration of territory which a young child experiences. They discuss children's territoriality beginning at home as the clearly marked private territory of their family. Within the home Altman & Chemers (1984) point out that there will be further demarcation of territories, including, for example the bedrooms of the parents or older siblings. These will be controlled as part of the organisation of the home and, within this domestic context, defended.

Altman & Chemers (1984) specify two purposes of territorial behaviour relevant to the well-being model and its relationship with physical spaces: identity management and the regulation of social processes including access to resources. These are seen as linked '... since they both deal with control of access to the self and to things related to the self (p.137).' Similarly Kintrea et al. (2008) explain the motivation to use space in a way that develops identity and relationships and describe the pursuit of recognition and respect among peers.

At this stage territory would appear to be highly relevant, particularly in an architectural discussion of open or closed spaces. This relates to places and features which can be used in school by children to maintain or manage their social identities, influencing longer term personal identity; the mask and the face as Cochran (1982) described (Chapter 6 considers this further).

4.2.6.5 Colour

'The frootbox because it is boring and has no colour.' David, from the Turtles is a rare example of a child who mentioned colour throughout these studies. It is noted that people are often vociferous about the effect of colour despite a contradictory research base (Sundstrom, 1987). Significantly in David's comments he refers to a lack of colour rather than particular colours he would like. Appendix 7 provides the results of an exercise with the same 104 children identifying their favourite colours and suggesting cultural influence towards more stereotypical choices of blues and pinks.

Maxwell (2000) claims the significance of colour to children and (Burke & Grosvenor, 2003, pp.28-29) maintains that colour features prominently in children's thoughts of their school environment. For example, 'I think the school is really drab and ugly and I would like it to be nice and colourful and clean (Lisa, 13, Glasgow)' and 'I feel very strongly about the colour of the walls of the classrooms because all the walls are white and they make you feel cold (Yusuf, 10, Cardiff).'

Engelbrecht (2003, p.2) acknowledges 'the amazing power of color on humans and its ability to enhance our experience of the learning environment,' and notes the link between colour and alertness and mood, mental clarity and energy.

Having argued the importance of colour, Engelbrecht (2003, p.1) concurrently maintains that 'from psychological reactions to learned cultural interpretations, human reaction and relationship to color is riddle [sic] with complexities,' which naturally leads to an inconsistent research base. For example, the research of Radeloff (1990) and of Ou, Luo, Woodcock & Wright (2004) demonstrates a direct contradiction in gender preference to school colour. Meanwhile, Higgins et al. (2005) describe ambiguity in the research on pink with Hamid & Newport (1989) maintaining that children in a pink room showed more strength and better mood than children in a blue room, seemingly at odds with Schauss' (1985) research which asserts pink as energy sapping.

Mahnke (1996) is very specific in his recommendations for schools: warm bright colours for expression in primary schools, cool colours to aid concentration in secondary schools, a range of colours in hallways to offer personality. Based on the findings to date this can be interpreted in the same way as the class mascot discussed in Chapter 3; colour is applied to promote desired behaviour.

While the study schools are typically adorned with more uncoordinated colour, by comparison the Reggio Emilia approach to colour is much more subdued, favouring subtle, natural shades; a general philosophy increasingly lauded as a model for primary environments (Dudek, 2000). In a similar way to Steiner, Reggio Emilia deliberately chooses natural materials and, in this respect, the design options have not been multiplied to the same degree by technology. It is possible that techniques for mass production of colour have devalued colour leading to the need for brighter and brighter colours in schools in order to have an impact. This relates to Saint's (1987) comment that 'today, a bold splash of colour is devoid of meaning. Forty years ago it could stand for hope and half forgotten gaiety (p.90).'

A practical, functional view is described by Laris (2005) which is irrespective of colour choice and specific colour impact. Laris (2005, p.27) describes the consequence of using a variety of colours in the rules of children's play:

It is common that groups of children will agree on a rule where a colour is a key factor, indeed a catalyst in their game. For example they will say, 'let's climb through the ropes,

but this time, no touching the green ones'. The colour variation affects the pattern of use in a way that encourages decision and rule codification.

Laris' (2005) thoughts would appear to be most consistent with children's responses in this and further studies of this thesis and warn against placing too much importance on the specifics of colour in school design.

4.2.6.6 The process

This was a group study and there is evidence that the children used each other's ideas and the class discussion to form their own ideas. This would partly explain the consensus reached. There is also an indication that the pursuit of logical thought on the part of the teacher, encouraging the child to explain their ideas through the writing process, does not reveal as much about the child's thinking as the drawing (Robinson, 1994). The study allowed children to influence each other and it is noticeable that there is some reciprocity of responses indicating that social relationships have a bearing on how children express preference for space and things. For instance Robert likes the builders' yard but Maria does not. Their relationship is not close as the social network analysis reveals in Chapter 5; reactive responses to physical features based on individual and group identification are discussed in Chapter 6.

GDBD on the whole produced inferences to the physical school whereas the *Favourite Place or Feature* study forced the children to consider their environment.

Interpretation is not always straightforward. For example Ruth's remarks about banging her head on the ability group signs above the tables may well be an uncomplicated comment about the practicality of the signs. However, it may be tempting for a researcher to search for deeper meaning and treat Ruth's comments as conscious or unconscious criticism of ability groups. Filming which was carried out as a supplementary study with the children captured Tanya knocking her head on the sign whilst in conversation with Natalia, suggesting that it is a response to the functionality of the environment and perhaps nothing more.

4.2.7 Review

The discussion in Chapter 3 questioned the validity of the Turtles' responses to the *GDBD* study as an accurate reflection of their well-being warning against superficial enquiry with children to guide design. The *Favourite Place or Feature* study, though taking a very similar format, betrays the playfulness of the class and the importance of fun and friends. The responses from School S are consistent with the *GDBD* study in which learning appears to provide a backdrop to the

children's social agenda. This finding corroborates Clark's (2005) assertion that a range of enquiry methods is required in order to gain a rounded view of the child's perspective.

Significantly, the study indicates that positive or negative feelings towards places and things do typically relate to association rather than the designed intention itself. In this way children appear to be accepting of the physical form of the school and judge it in respect to the social activity which it affords. The assembly hall is a good example of how a place's associations rather than its physical attributes can be considered the overriding factor in children's well-being at school. It is questionable whether improved furniture, for example, would alleviate the expressed boredom.

Developing this idea further the Year 5 Barracudas at School S cited friends, football and fun as the three main contributors to a good day at school. Equally, the three main reasons they gave for their favourite places were Play and fun, sport and friends implying that the physical school and well-being are one step removed from each other; in this case well-being is dependent on the social opportunities the children can create through use. It also appears that children's creativity enables games and activities to be developed around seemingly innocuous physical features of the school which were not intended in this way.

Despite a certain lack of individuality in the responses it is also clear that children are far from a homogenous group and that reaching a consensus in terms of design priorities is highly unlikely. Certain responses regarding the friendship bench or the playground also indicate the challenge of inclusion in schools. Equally, with regards to the classroom, some children find it a place in which they feel safer and they express a preference for having the teacher present. The classroom in this respect could be described as more inclusive of children who are, or feel, socially vulnerable. It is interesting additionally that, although freedom is mentioned by the Barracudas at School S, they do not necessarily want to escape from school. On the contrary they appear to be very happy there.

Finally, while the classroom remains a generally popular place to be, it is clear from both schools that, given the choice, the majority would choose not to be in it and would typically choose to be outdoors.

4.3 Study 3: Take it or leave it

4.3.1 Aim and methodology

Take it or leave it was a study devised to be less classroom-based and more interactive than the *FPF* study, although its aim is comparable. The study was only carried out at School A because the school context created the opportunity. The school is due to be replaced in 2010 by a purpose-built new school on the edge of the village and so the children were asked to indicate things or places they would either like to take with them or leave behind.

It was considered necessary to investigate whether an alternative approach portrays the children's relationship with the physical school differently. Care & Chiles (2006) asked children to indicate their favourite and least favourite places in the school playground by using two differently coloured balloons, an approach which encourages the children to make polar choices about their school environment from which patterns of responses across the whole group can then be assessed.

The children tied one colour balloon at their favourite place and another colour at their least favourite. The football area of the playground a favourite for some, was also least favourite for others - mainly the girls. This led to the decision to locate an outdoor seating area there to make it a nicer place for a wider group of pupils to use. Virtually everyone's least favourite place was the toilets (Care & Chiles, 2006, p.67).

However, investigating why children feel positively or negatively towards physical elements of the school potentially unearths a relationship which discloses sources of cultural influence and values for, example. In the *Take it or Leave it* study, therefore, rather than asking the children to nominate one favourite and one least favourite place, this study allowed the children to indicate three of each. Secondly, instead of using balloons, each child had three paper plates with smiling faces and three with sad faces. Children were subsequently asked to describe where they had placed their plates and why.

4.3.2 Participants

School A comprises approximately 100 children. All the children present on the day of the study were included. In addition to the Turtles and Class 3, this meant that the reception class, known as the Puffins, and Class 2 took part.

4.3.3 Standardised instructions

The study was carried out across a whole school day and organised so that only one class was involved at any one time. Each class was split into groups of between six and ten children. These children were each given three paper plates with happy faces on and three plates with sad faces. The instructions given were deliberately simple: the children were asked to walk around the whole school and place smiling plates on the places or things they would like to take with them to their new school and sad plates on the places or things they would like to leave.

Each group toured the school, having been encouraged to take a good look around before they decided where they would like to place their plates. Once the plates were placed, the children returned to the classroom to describe on a piece of paper where they put their plates and why they chose these places or things. While they were doing this the next group were given plates and began their tour.

4.3.4 Evaluation and presentation of the results

The responses to the Take it or Leave it study were collated in a way which reflected the *FPF* study, although the number of children participating made it possible and more meaningful to show the reasons given by children for each choice they made. For example, if a group of children chose a particular bench, the results indicate what percentage of these children chose the bench because it is comfortable or because it is a *base* for their games, for example. The number of children and the number of choices they were making also allowed the results to be presented by gender.

Hence the results are presented in two types of table. The first type illustrates the top ten places or things which the children would either take or leave, indicating the percentage of all choices made. This is illustrated by gender and then shown overall for all children, below which the top 3 reasons given by the children for their choice are shown. The second table type shows the top ten reasons children gave for choosing to either take or leave a place or thing. Again this is by gender and then overall for all children under which the top 3 places or items which they relate to these reasons are shown.

4.3.5 Findings

4.3.5.1 Take it

| TAKE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------|------------------|------------|----------------|------------------|---------------------|---------|------------|----------------|---------|---------------|
| Boys | Computer | Toyshed | Equipment Shed | Friendship Bench | Lego | Bell | Whiteboard | Water Fountain | Toilets | Markings |
| | 13% | 8% | 7% | 5% | 5% | 4% | 3% | 3% | 3% | 3% |
| Girls | Friendship Bench | Whiteboard | Library | Computer | Playground Markings | Benches | Windows | Bin | Bell | Class 3 steps |
| | 19% | 9% | 9% | 6% | 4% | 4% | 3% | 3% | 3% | 3% |

| | | | | | | | | | | |
|----------------------|------------------|-----------|------------|-------------------|-----------|---------------------|----------------|------|------|---------|
| All | Friendship Bench | Computer | Whiteboard | Library | Toyshed | Playground Markings | Equipment Shed | Bell | Lego | Benches |
| | 12% | 10% | 6% | 6% | 5% | 4% | 4% | 3% | 3% | 3% |
| Top 3 Reasons | | | | | | | | | | |
| 1 | Friends | Play/ Fun | Usefulness | Learning/ Reading | Play/ Fun | | | | | |
| 2 | Comfort/ Space | Learning | Learning | Feelings | Use | | | | | |
| 3 | Quiet/Calm | Use | Play/ Fun | Order | Visual | | | | | |

Table 4-17 Top ten items that children would take and the top 3 reasons given for each item

| TAKE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------|-----------|-----------|----------------------|----------------------|----------------------|----------|--------------------|--------------------------------|-----------------------------------|----------------------|
| Boys | No Reason | Play/ Fun | Use | Learning/ Reading | Health/ Nutrition | Friends | Exercise/ Sport | Feelings | Comfort/ Space | Achieve- ment |
| | 22% | 20% | 18% | 9% | 6% | 4% | 3% | 3% | 3% | 2% |
| Girls | No Reason | Friends | Learning/ Reading | Play/ Fun | Use | Feelings | Comfort/ Space | Colour/ Patterns/ Visual | Hygiene/ Cleanliness/ Order | Health/ Nutrition |
| | 21% | 15% | 14% | 13% | 11% | 8% | 6% | 3% | 2% | 2% |

| | | | | | | | | | | |
|--------------------|------------------------|-----------|------------|----------------------|---------------------|----------|-------------------|----------------------|--------------------------------|--------------------|
| All | No Reason | Play/ Fun | Use | Learning/ Reading | Friends | Feelings | Comfort/ Space | Health/ Nutrition | Colour/ Patterns/ Visual | Exercise/ Sport |
| | 22% | 17% | 14% | 11% | 9% | 6% | 4% | 4% | 3% | 2% |
| Top 3 Items | | | | | | | | | | |
| 1 | Playground Markings | Computer | Whiteboard | Library | Friendship Bench | | | | | |
| 2 | Benches | Toyshed | Computer | Computer | A Friend | | | | | |
| 3 | Friendship Bench | Lego | Toilets | Whiteboard | Class 3 Steps | | | | | |

Table 4-18 Top ten reasons why children chose to take items and the top 3 items relating to each reason

4.3.5.1.1 What boys would take and why

The results, described in Table 4-17 and Table 4-18, illustrate both differences and similarities by gender and age. Overall the most popular element for boys appears to be the classroom computers with 13% of the vote. When this is analysed by class, however, it shows 30% of Class 2's vote was for the computer whereas no boys in the youngest classes, the Puffins and the Turtles, chose to 'take' the computer to the new school.

Boys also showed a distinct preference for sheds used to store either toys or PE/play equipment. The toy shed was predominantly the favourite of the Turtles and Class 2, whereas the boys in Class 3 appear to have moved on to more sport-oriented play equipment. Other differences occur with items which are class-specific like the Turtles' lego for example.

The Puffin boys show a strong preference for the grass at the back of the school and although he is in the next class up, Gabriel puts forward one of the reasons: 'when I fall over it will not hurt me.' Relevantly it is the only area of grass in the school grounds.

Interesting attachments are also shown to the playground bell by the two youngest classes. The bell is rung at the end of playtime and while David mentions how useful it is to know when to go into school, Oliver is relieved that it means that the whistle is not used anymore. There is possibly an implied attachment to adults and authority, in this example, although Oliver's actual comments relate to the sensitivity of his ears.

Other noteworthy features are the drain covers which, rather than a source of smell or dirt, are a source of fun for the youngest Puffin boys. The Puffins also strongly highlight the playground markings which suggest a level of detail in play and a height that is relevant to them.

The main reason given by the boys for their choices is play and having fun; although friends are implied, a distinction between the two is suggested because the responses relating to play and fun are not necessarily dependent on the involvement of particular friends, as appeared to be the case in School S. Therefore whilst *friends* is a natural and positive reason it can also imply a level of discrimination.

The second most common reason given by boys is usefulness. Simon says, for example, the 'windmill in the Dolphins Garden becous u can see witch way the wind is blowing.' Liam, also in Class 2, wanted to keep the globe in case he needed to find a place in the world. It appears that these boys seek function in the physical school.

4.3.5.1.2 What girls would take and why

The most common reasons for girls to choose a part of the physical school relates to friends which is consistent with the FPF study. Learning and reading comes second and play and fun third. It is evidence of the social difference between boys and girls and how this reflects in their social behaviour.

Overall girls at School A show a particular attachment to the friendship bench which also figured strongly in the FPF study (See section 4.2.5.2.3). For girls expressed attachment to the bench is mainly related to friends. On inspection however there are peculiarities across the classes. While it is emphatically popular with Class 2 and Class 3 girls, for the youngest girls it is both highly favoured and disliked by an equal number. Although the reasons for the youngest children's selections were generally not available, it is most likely that attachment is territorial and the territory is controlled by older girls. In addition, popularity may be linked to the quality of the youngest girls' relationships with the older girls.

The Puffins also have a particular fondness for the other benches around the playground which they appear to have made their own. Over 20% of responses were in favour of these benches.

In Table 4-17 it can be seen that girls' motivation for choosing items, other than friends, is significantly related to learning. This is evident in their choices of whiteboard, computers and the library. However, this is again a phenomenon of age and contributed to mainly by the oldest children. In the youngest class, the Puffins, the girls did not include any explicit learning tools in either the things they wanted to take or those they would prefer to leave.

4.3.5.2 Leave it

The results, illustrated in Table 4-19 and Table 4-20 imply a greater consensus of why things are chosen to be left than why things are chosen to be taken, centring round the curtailment of freedom, space and cleanliness.

| LEAVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------|---------------|---------|------------|---------|----------|------------------|------------|------------------|----------|----------------|
| Boys | Head's Office | Toilets | Benches | Library | Markings | Cloak room | Bin | Friendship bench | Toy shed | Printer |
| | 9% | 8% | 7% | 5% | 5% | 5% | 3% | 3% | 3% | 3% |
| Girls | Head's Office | Toilets | Cloak room | Bin | Gate | Friendship bench | Whiteboard | Lego | Computer | Equipment shed |
| | 9% | 8% | 7% | 7% | 6% | 4% | 3% | 3% | 2% | 2% |

| All | Head's Office | Toilets | Cloak room | Bin | Benches | Gate | Friendship bench | Library | Markings | Whiteboard |
|------------|---------------|---------|------------|-----|---------|------|------------------|---------|----------|------------|
| | 9% | 8% | 6% | 5% | 5% | 4% | 4% | 3% | 3% | 3% |

| Top 3 Reasons | | | | | | |
|----------------------|-----------------------------|-------------------|---------------|---------|---------------|--------------------------|
| 1 | Comfort/Space | Hygiene | Comfort/Space | Hygiene | No Reason | Freedom/Rules/Discipline |
| 2 | Freedom / Rules/ Discipline | Comfort/Space | Order | | Comfort/Space | Use |
| 3 | Feelings | People/ Behaviour | Use | | Use | |

Table 4-19 Top ten items that children would leave and reasons given

| LEAVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------|----------------|----------------|----------------|--------|----------------------------|----------------------------|--------------------------|--------------------------|----------|--------------------------|
| Boys | No Reason | Comfort/ Space | Hygiene/ Order | Safety | Use | Freedom/ Rules/ Discipline | Stimulation/ Imagination | Colour/ Patterns/ Visual | Feelings | Learning/ Reading |
| | 26% | 20% | 9% | 9% | 8% | 4% | 4% | 3% | 3% | 3% |
| Girls | Comfort/ Space | No Reason | Hygiene/ Order | Use | Freedom/ Rules/ Discipline | Safety | Feelings | Upkeep | Nature | Stimulation/ Imagination |
| | 25% | 24% | 16% | 9% | 6% | 5% | 5% | 4% | 3% | 2% |

| | | | | | | | | | | |
|--------------------|-------------|----------------|----------------|-------------|---------------|----------------------------|----------|--------------------------|--------|--------------------------|
| All | No Reason | Comfort/ Space | Hygiene/ Order | Use | Safety | Freedom/ Rules/ Discipline | Feelings | Stimulation/ Imagination | Upkeep | Colour/ Patterns/ Visual |
| | 25% | 22% | 13% | 8% | 7% | 5% | 4% | 3% | 3% | 2% |
| Top 3 Items | | | | | | | | | | |
| 1 | Markings | Head's Office | Toilets | Printer | Fireguard | | | | | |
| 2 | Dolls House | Cloakroom | Bin | White-board | Tarmac | | | | | |
| 3 | Benches | Library | Cloakroom | Toy shed | Class 3 Steps | | | | | |

Table 4-20 Top ten reasons why children chose to leave items and the top 3 items relating to each

The headteacher's office was the most commonly chosen place to leave behind, although on inspection it only appeared in the responses of Class 3. Reading into this response, suggests a disaffection with authority. Mark says he does not like the headteacher while Georgina remarks that the headteacher's office is 'big and scary.' However, if this is generally the case, the written reasons which the boys gave are less confrontational: Ross mentions that the office 'takes up a lot of the playground,' impinging on their limited playing space. Many other children agree with this sentiment. Fairness is also a factor. Sarah mentions that the headteacher's office is 'too big and we have a tiny classroom.'

Overall the toilets are the second least favourite place but once again this is the result of the older children's responses. The toilets do not appear at all in the list of the Puffins or the Turtles. The School S example of separate toilets for different ages in conjunction with this finding might suggest that the older children have an issue with the way the younger children use the toilet. It is

true that many children will be going to the toilet alone for the first time and will probably not be used to communal toilets.

4.3.5.2.1 What boys would leave and why

Of note in the boys' list of things which do not appear for the girls are the playground benches and the library. These benches, as mentioned in Section 4.3.5.1.2, appear to be the youngest girls' territory, and it would seem that there is a degree of reciprocity in the boys' responses, who are not keen on taking them with them. This extends to all the boys except the Turtles. The reverse is also clear for lego for which the Turtle boys show an emphatic attachment to but which a large number of the Turtle girls would not like to see in their new school.

Safety appears to be a significant issue particularly for the younger boys, which corresponds with the results of the *GDBD* study. Hurting oneself appears to be a daily concern. For example the Class 3 steps leading to the mobile classroom are not designed with children in mind and several of the children mention that it is possible to get your feet stuck in the gaps. Also, a boy in Class 2 declares that he does not like the Turtles stone bench because 'if someone fell over they will hurt them self.'

4.3.5.2.2 What girls would leave and why

Class 2 girls complain about their cloakroom to the point that it receives the highest proportion of responses for one class (30%). The Class 2 boys agree with this but not to the same extent (18%). The cloakroom indicates an area in which a child's possessions are kept and, in this case, space is extremely limited. This can be related to the earlier discussion of territory and the current design briefs' calls for children to feel a sense of ownership (DfES, 2003b).

Girls, particularly, mention the school gate as a place they do not want to take with them. In their memory is the old gate which was much lower and much less secure. Lara says that the 'high gate feels like you can never get out' and Georgia mentions the black gate because it 'feels like a prison.' The reference to prison is common. BCSE (2008, p.5) suggests that 'whilst school entrances and exits need to be monitored and controlled, a school is not a prison and shouldn't look or feel like one.'

4.3.6 Discussion

4.3.6.1 Level of interaction

| Boys | | | Girls | | |
|------|-------------------|-------|-------|-------------------|-------|
| 1 | Object | 43.6% | 1 | Furniture-outdoor | 24.9% |
| 2 | Architecture | 11.5% | 2 | Object | 21.5% |
| 3 | Furniture-outdoor | 10.8% | 3 | Architecture | 20.1% |

Table 4-21 Top 3 categories of items that boys and girls would like to take

Evaluating the items which the children chose is interesting when done by the category of design they fall into. Table 4-21 shows that the top three categories are the same for boys and girls but the boys' orientation to objects and the girls' tendency towards outdoor furniture, like benches, are conspicuous. The boys' results are guided by their affiliation with the toys and sports equipment and not surprisingly 32% of reasons for choosing objects are related to play and fun.

From this study architecture does appear to have a bearing on the child's conscious thoughts about the environment.

Comparing the reasons why boys and girls have chosen outdoor furniture reveals that 16% of boys' responses is about play and fun and 23% about friends. For girls 8% of responses is about play and fun and 44% is about friends. This indicates the potentially more discriminatory behaviour of girls socially and the physical objects which support this. Associated with this it is also notable from the results that the classroom and its contents do not appear to be the subject of the same exertion of social territory as that found in the playground, implying different perceptions of ownership.

Within this category the emergence of the friendship bench as an important and well understood cultural feature continues to appear. Katie in Class 2 expresses that it affords a 'quiet time and if you don't have someone to play with they will come up to you.'

| Boys | | | Girls | | |
|------|-------------------|-------|-------|----------------|-------|
| 1 | Architecture | 36.7% | 1 | Architecture | 33.2% |
| 2 | Object | 18.1% | 2 | Object-outdoor | 17.2% |
| 3 | Furniture-outdoor | 10.0% | 3 | Object | 16.8% |

Table 4-22 Top 3 categories of items that boys and girls would like to leave

Table 4-22, representing the choices about items children would like to leave, indicates a common disaffection towards elements of architecture with over 40% of reasons for this from both boys and girls citing comfort and space. The site of the school is indeed restricted. So for example, Jack refers to his own classroom as small and says 'we are too squashed.' Endorsing the summary of GDBD, it would appear that the role of architecture, in the child's perception, relates to space. It is also important to identify that, at least spatially, architecture is important in terms of well-being.

The two sets of results together suggest the level at which the children interact and a triangle between objects, outdoor furniture and architecture.

Clark (2005) asserts that objects represent a layer of meaning which are used by children as landmarks. The object culture within mainstream primaries, if not minimal, is uncoordinated; evidence from the three schools highlights a contrast with the educational philosophies supporting Montessori and Steiner, for example (Lillard, 2008). The School B Year 1 classroom, by comparison, contains a teddy bear, books, interactive whiteboard, projector and laptop, children's plants, a number mat, and the children's tray cabinet yet it is notable that many of these cannot be touched. An allocated drawer seems to be the only thing that the children feel is theirs and so the resultant territorial focus on drawers seems to be disproportionate.

Conversely, the Montessori philosophy remains heavily based on the provision of objects for discovery and manipulation and which provide a common developing context for the child as they get older (Standing, 1998). Similarly M. Kirigin (personal communication, 20 May 2008) points out that Steiner schools objects and materials are seen as fundamental and it is viewed as essential that they are made from natural materials, particularly wood. Doddington & Hilton (2007) additionally identify Froebel as applying the concept of discovery through objects with his geometric wooden blocks.

These examples of alternative educational philosophies illustrate a clear prescription of the environment and provide an example of how adults define children's discovery even in what might be considered more child-centred schools. However they also illustrate a fundamental shift towards objects within these schools.

Alex from the School A Turtles raises another relevant dimension to children's relationship with objects. Speaking of things he would like to leave behind he says, 'the number bricks because it makes me get bad.' There are indications within this study that children link their behaviour or the behaviour of others to parts of the physical school. This may be an example where the

establishment of territory creates discriminating behaviour or, in Alex' example, a set of objects encourages him to behave in a way which the teacher deems unacceptable.

This idea is developed further in Chapter 5 and 6.

4.3.6.2 The process

The *Take It or Leave It* study was energetic and very visual which meant that patterns could easily be detected and it was an advantage that children could go out and look, rather than have to remember their school, enabling the study to access more subconscious factors.

It was clear that there was a group mentality to the process which was exacerbated by the visual nature of the exercise and therefore it was not possible to gain independent responses from each of the children. Both this chapter and Chapter 3 have presented research susceptible to the influence of teachers, possibly revealing more about the way the adults think than the children. In addition the children have been able to easily influence each other and, as a result of both of these points, it is likely that the findings so far have been more common and unanimous leading to potentially invalid assertions that Education propagates homogeneity.

Additionally, the process asked the children for instinctive responses, by placing the plates, and reasoned responses by asking them to explain their choices; it was interesting to see how the choices were rationalised. Once again, it is identified in this thesis that the unreasoned responses are most revealing in that they are less curtailed by the demands of the question 'why?'

Finally, the assertion that architecture is less prevalent must on one hand be regarded as obvious because children were not able to access aspects of the architecture with their plates. On the other hand this lack of access is relevant in itself to the child's daily experience. However, both studies rely on conscious responses from the children which may not reflect the nature of design and, in particular, architecture (Rasmussen, 1964).

4.3.7 Review



Figure 4-18 Playground markings at School A

The findings of the *Take it or Leave it* study are consistent with the *FPF* Study demonstrating that within the achievement culture at School A there is still a consistent need for play, friends and physical expression. This was not expressed in The *GDBD* Study and indicates that children's well-being has different facets and it is important to use a variety of approaches in order to evaluate and understand them.

The Study revealed that there is an important relationship between the elements of design, particularly between architecture, objects and outdoor furniture which further exposed differences by gender. Girls were most aligned to outdoor furniture, indicating social/territorial behaviour whereas boys expressed a greater preference for objects which changed from play to sport with age. The girls' potential need for ownership of space, as opposed to the boys' for objects, is further evidenced by the response to the Class 2 cloakroom. Architecturally, the children indicated the importance of space.

As a result of the study not being carried out in the classroom it is feasible that the children felt less influenced by the teacher and the culture and the findings indicate the subtlety of children's interaction with the physical school. For example, although references to colour were very limited; references to patterns were not. Additionally, elements like playground markings (See

Figure 4-18) and drain covers, for example, figured strongly and implied associations with play and social activity. Equally there is evidence that children react based on the places or things other groups relate to by taking an opposite stance; this was evident by age, gender and class and again indicates the importance of territory and ownership.

Whether determined by the culture or the social behaviour of the child, it is strongly apparent that the physical school is given meaning and association which is an overriding factor in children's relationship with it.

4.4 Implications for the continuation of research

The studies illustrated in this chapter suggest that children's conscious relationships with their physical school in respect to their well-being are fundamentally associative, in which positive or negative identification relates to the social and learning opportunities they present. Within reason, design quality and materials, for example, are typically unquestioned indicating a cultural acceptance of, at least in these study schools, their existing school environment. This does not necessarily imply that such qualities are unimportant but they certainly appear to be less conscious and, with respect to well-being, secondary.

Children's responses so far imply that a further investigation of positive or negative identification with physical elements of their school is highly relevant, and will arguably reveal the nature of their associations with the social and cultural school. If, presented with a number of different physical elements, a child expresses a generally positive sense of identification, this is logically an indicator of identity and feelings of inclusion.

Simply feelings of cumulative positive identification and inclusion can be referred to as a child's *sense of belonging* and its relevance to the well-being model is evident in Woodill et al.'s (1994) definition of well-being who described *being, belonging, becoming*. The limited literature on belonging often begins by citing Maslow (1943) who contends that belonging is a basic human need which must be satisfied before effective higher level functioning can take place. Both Libbey (2004) and Willms (2000) implicitly support these fundamentals of Maslow's (1943) theory while Baumeister & Leary (1995, p.498) maintain that 'much of what human beings do is done in the service of belongingness.'

Morgan identifies many of the same elements of the well-being model and corroborates the assertion that multiple factors add complexity in research but, critically, she highlights that

'belongingness is a variable of some importance in many aspects of the educational context (2003, p.32). This is echoed by Anderman (2002, p.796):

In recent years, a small but important literature on school belonging has emerged. Results of a variety of studies converge on the consistent finding that perceiving a sense of belonging or connectedness with one's school is related to positive academic, psychological, and behavioral outcomes during adolescence. Although different researchers operationalize and study belonging in various ways, there is a general consensus among a broad array of researchers that a perceived sense of belonging is a basic psychological need and that when this need is met, positive outcomes occur.

Relevantly Voelkl (1996, p.762) relates belongingness to a student's sense of being a 'significant member of the school community, is accepted and respected in school, has a sense of inclusion in school, and includes school as part of one's self definition.' Similarly, Goodenow & Grady (1993), although possibly underestimating a child's own will and agenda, assert that belonging to a school environment depends on the degree to which students feel 'personally accepted, respected, included, and supported.' If this sense is indeed positive then it is rational to start to use the language of *inclusion* in schools and design which participation alone, for example, does not justify.

Figure 4-19, recognises the notion of being, belonging, becoming by illustrating how belonging may be viewed as central in the pursuit of well-being and importantly as a trigger for changes in esteem, personal identity and other longer term outcomes. As a central kingpin of the model, researching a child's sense of belonging suggests a practical approach to appraising the complexity of well-being.

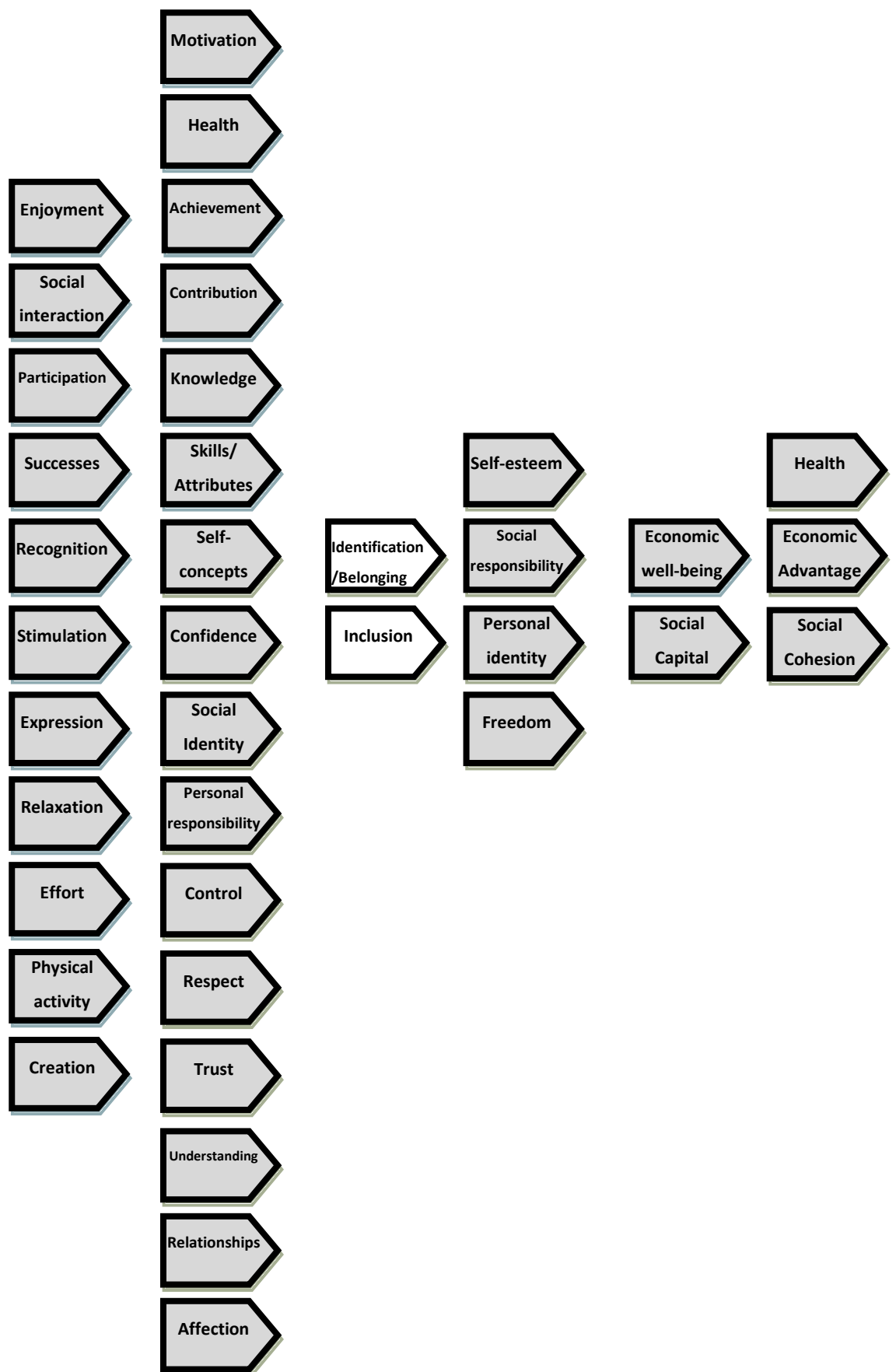


Figure 4-19 Belonging – central to the well-being model

4.5 Summary

Children, as Piaget (1975) asserted, think differently from adults and Chapter 4 has revealed evidence of the ways in which children think about and interact with physical spaces and objects. Children's responses in the studies broadly concur with Clark who identified three types of association with, in this case, spaces: 'Some were merely functional, others sensory and others symbolic (2005, p.1).'

Fundamentally the research methods employed here have revealed unsurprising results. Given the choice, children would generally prefer not to be in the classroom or in the library in favour of playing outside. In the same way that the classroom has proved an enduring feature of education, the urge to not be in one has also persisted (Bond et al., 2002). This potentially relates to the curtailment of physical and social opportunities. However, relating the findings to those of Chapter 3, the School A Turtles significantly report that, although they would rather be somewhere else, the difference between a good day and a bad day at school is still to be found in the classroom.

Understanding the point or level of interaction is vital in designing child-centred schools and children have been shown to report to interact at a physical level which is closest to them. Girls in particular are enthusiastic about outdoor furniture and it appears that this furniture sustains their social network and territories in a way that classrooms do not. Boys, on the other hand, are more inclined towards objects relating to outdoor play and sports. These findings would suggest therefore that a school inspired by well-being should consider aspects of design which are closer to the child and maintain there is an inherent risk in the current programme that tasking architects with school design misdirects the focus away from child-centred outcomes. Certainly at a conscious level, children's connections between well-being and the physical school would appear to prioritise elements other than architecture and imply a link to senses such as touch. Negative reports about toilets and bins equally indicate the importance of children's senses as a consideration in design and use.

However, it must be remembered that culturally children's well-being can be directed to certain objects and away from others, as Chapter 3 indicated; perhaps, as Beiner (2005) claims, architectural spaces are more honest and there is an implicit finding within this research so far that architecture does have a more subliminal role.

Furthermore, the research methods sought the children's conscious responses and, if the child's relationship with architecture is more subconscious, then the conclusions from this chapter alone

are probably simplistic. Rasmussen (1964) certainly identifies humans as having a very subtle relationship with architecture which 'not everyone can understand (p.9).' Equally however, he indicates that children initially develop an appreciation of architecture through objects like balls, for example. Currently therefore this discussion is inconclusive given the reliance of the research on children's conscious thought.

Nonetheless, what has emerged is that positive identification with aspects of the physical school used to determine a child's overall sense of belonging presents a useful research tool with which to evaluate a child's relationship with the physical, social and cultural school. The associative nature of children's responses so far indicates that, at a more affective level, the three cannot be easily separated as previous research has tended to try to do. Revealing what aspects of the social and cultural school the child associates with a chair for example and, conversely, how the chair influences the social and cultural school indicates this interdependency and the developing attention of this thesis.

Chapter 5 will describe how such research has been pursued and how identified limitations of the methodology to date have been addressed.

Chapter 5: In search of belonging

...some pupils receive subtle messages from their teachers that suggest that they are not valued as learners (Ainscow, 2003, p.19).

5.1 Introduction

Chapter 3 and 4 questioned children's perceptions of their own well-being and what physical elements of the school they believe make them feel good or bad or which they like or dislike. The results reveal a more subtle interaction with the physical school environment relating to the child's social and physical expression; this is consistent with the relatively objective model of well-being presented in Chapter 1 and differed notably between girls and boys.

However, there is evidence that well-being is indeed most likely to be shaped by the culture of the school in which the physical and human school environments inextricably combine. As such, children's relationships with the physical school were shown to be ostensibly associative and so factors which can occupy designers like colour and materials are to a great extent secondary. Additionally it has been seen that association allows certain aspects of the physical school to be appropriated in order to direct children towards favoured outcomes.

The well-being model illustrated the complexity of the psychological and physiological journey which carries children from school hopefully through to healthy, happy and prosperous adults and making sense of these relationships has confounded the research into educational design. Chapter 4 concluded that research exploring associations by assessing children's positive identification with aspects of the physical school and thus cumulatively presenting a measure of a child's sense of belonging to school, is a meaningful research angle on well-being. This, it was predicted could shed light on the nature of children's well-being with respect to the physical school without becoming lost in its complexity.

This chapter therefore presents a progression of the primary research based on the advancement of the well-being model described in Chapter 4, aiming to measure children's sense of belonging in respect to elements of their physical school and against the subjective influences on their daily experience, like gender, age, perceptions of happiness at school, ability and behaviour and their popularity.

Chapter 3, particularly, identified the significance of the actions and judgments of the teacher to the child's sense of well-being. These judgments were often expressed or given meaning through the physical school and therefore the teacher's perception of the child, reinforced by or possibly instigated by the physical environment, would appear to have a potentially profound impact on the child. For this reason, discovering patterns in the way this materialises across a range of children is of great interest. In particular this means evaluating any connection between the children's perceptions of the physical environment and how the teacher perceives them.

The conclusions of both the previous chapters have cited the limitations of investigating children's conscious relationships with the physical school. By investigating positive identification and belonging individually with each child, and separately comparing this with children's reports on other aspects of school offers the chance to evaluate some of the subconscious factors at work. In addition, Harper (2002) describes the photo elicitation method used as a more probing approach.

Chapter 5 will present generic conclusions about children and their relationship with the physical school. These are presented for the older children although the results for Year 1 & 2, which are fully presented in Appendix 10, are referred to; the effect of several years of immersion in the school culture and society on the older children is of most interest. Chapter 6 will then go on to investigate the detailed responses for particular aspects of the physical school in relation to well-being, belonging and inclusion. The introductory research in School B and separate design intervention at School S will be compared with some of the results to give a practical view of their validity.

5.1.1 Aim of the belonging studies

The overall aim of the research presented in this Chapter is to assess children's identification with their physical environment ranging from the architectural through to communication and decorative features, as the preceding research has directed. Positive identification with individual features is aggregated to provide a general sense of belonging for each child. The relative importance of functional/aesthetic, cultural and social association will be evaluated by considering the nature of each feature; the school hall for example was deemed to be highly culturally significant.

The assessment will then be reviewed against themes which have emerged in the research presented in earlier chapters, including measures of children's class social network, peer relationships, and their expressed happiness and self-concepts relating to ability and behaviour. In this way patterns will be investigated which, for example, could show that the least popular

children relate to particular aspects of the physical school more than other children, contributing to a discussion of inclusive design. Alternatively, girls who are perceived to be less able may be revealed to identify most with outdoor furniture. Overall the studies aim to understand evident patterns linking the child's well-being to their physical environment to conclude how design might positively contribute. In particular, based on the discussion of previous chapters, the influence of behaviour and achievement/ability is of particular relevance.

The studies are:

Study 4 - Identity Cards: A series of photographs of the physical school environment shown to children who indicate which they identify with and which they do not using smiley faces linked to a 1 to 5 Likert scale.

Study 5 - Social Maps: A social mapping exercise which involves each child indicating the perceived closeness of their relationships with every other child in the class, aggregated to present a social map showing the most and least socially central children.

Study 6 - Good Bad Happy Sad: For a variety of measures relating to ability, behaviour and happiness each child is asked to indicate perceptions of their daily experience at school. Separately the teacher is also asked to indicate their perceptions of the child's ability and behaviour.

5.1.2 Ethics and consent

The studies described in this Chapter were presented to and endorsed by the Bucks New University Ethics Committee in March 2007. A risk assessment was supplied and used by the schools. Consent enabling children's involvement was gained by means of a letter to parents describing the research, its purpose and how the children would be involved. This letter was drafted for the school to adapt and send out in their standard format and language (See Appendix 5).

5.1.3 Participants

The studies were carried out at the same two schools as the exploratory studies presented in Chapter 3 and 4: School S and School A. Each school had a joint Year 1/2 class participating. In School S, a Year 5 class took part and in School A their joint Year 5/6 class participated. In total 104 children contributed.

5.1.4 The Methodology

Reviewing the ways in which people have attempted to measure belonging, or school connectedness as Libbey (2004) prefers to call it, reveals a tradition of questionnaire-based research which has been almost wholly carried out in secondary school settings. Chapter 1 suggested why secondary school is perhaps too late to fundamentally influence well-being for children whose previous school experience has already largely determined the range of their possible outcomes.

Chapter 4 described belonging as cumulatively representing a child's positive identification with aspects of school. Anderman (2002) does not specifically define belonging yet his questionnaire reveals the important aspects of school which contribute to belonging and, in his view, fundamentally centre around the social and cultural environments. Building on the work of Moody & Bearman (1998), he questions the degree to which a student would say:

1. I feel like I am part of this school.
2. I am happy to be at this school.
3. I feel close to people at this school.
4. I feel safe in my school.
5. The teachers at this school treat students fairly.

Studies from the social sciences primarily focus on these social and cultural aspects of belonging, prioritising them above belonging derived from aesthetic and inanimate features. Even in Voekl (1996), who unusually for this field of research introduces the concept of place in her enquiry, there is a presupposition that the psychological environment dominates. In this sense connection to the human elements of the school will override or determine belonging to the physical school, an assertion which is consistent with the conclusion of Chapter 4 identifying association as an overriding factor in design for well-being, at least with regard to the child's consciousness.

Questionnaires, as noted by Cohen et al. (2000), can be viewed as restrictive and leading in their nature, limiting investigation to the conscious mind and perhaps in Anderson's (2002) case to a narrow view of belonging. It would seem that, for a discipline like design where many proponents debate in terms of the subconscious (Pevsner, 1991), questionnaires or more open questions are only part of the necessary enquiry. Exploring conscious thought is also fraught with the limited frame of reference which children's backgrounds arguably impose. Chapter 3 identified that

children were typically using the same logic and reasoning to explain things, and logic is in many ways learnt often from the person asking the questions (Strauss & Corbin, 1990).

As an overall principle, therefore, the research presented in this chapter aims to minimise the use of words by using imagery of the physical school as a provocation of feelings (Harper, 2002) relating to the social and cultural school. Using images and symbols, the study endeavours to avoid leading the children to particular responses recognising that otherwise the greatest risk is not that the children say what they think they should say but they say what they think you want them to say.

Although the children are not directly asked to explain their choices in the studies, in line with Clark (2005), the studies are structured to maximise anecdotal and discursive analysis. It is recognised that this remains a conscious exercise but subconscious relationships with the physical school are predicted to emerge when the results are compared with children's reports of self-concepts and the social structure in which they sit.

5.1.4.1 Likert

Zeisel (2006, p.266) describes the usual process of applying a Likert attitudinal scale: 'groups of statements are presented to respondents for them to indicate the intensity of their agreement.' For instance, typically, as Zeisel indicates, there are 5 possible *attitudes* presented to a respondent for one particular Likert item, encompassing strongly agree, agree, uncertain, disagree, and strongly disagree. By applying numerical values to the choices made, appraisal is possible of overall attitudes. The use of a Likert scale therefore requires a decision to be made regarding the number of scale categories, words used, and the numbers or images labelling the scale (Smith & Albaum, 2005). While these can be extended to 7 point Likert scales and beyond, the studies presented in this chapter will use a 1 to 5 Likert scale to record the responses of the children.

It was decided that a 1 to 5 scale would be sufficient to allow for an appropriate differentiation of responses without overcomplicating the choice. Important consideration was given to the fact that approximately half of the children would be five or six years old and asking them to differentiate beyond happy and very happy, for example, would be excessive.

Furthermore, rather than words-based use of Likert, the studies did not present statements or request levels of agreement. Rather, as Likert items images or scenarios were presented and symbols used to gauge intensity of positive feelings, not as is traditionally the case, attitudes. In

this way the studies attempt to avoid the conscious application of possibly learnt logic to children's responses.

The smiley face is a symbol which is widely used in schools for assessment and self assessment and is generally well understood by the children (TES, 2009). The symbols are also used in internet or email communication and text messaging, known as emoticons, which it is proposed give 'people a concise way in e-mail and other electronic messages of expressing sentiments that otherwise would be difficult to detect (Lovering, 2007).'

The visual scale followed the Likert standard and included the neutral response; in order to avoid a central tendency bias, Greenleaf (1992) explains that this is often left out to ensure a positive or negative response in what is known as the forced choice approach. In this thesis, however, a child's use of the neutral response is deemed to be perfectly valid and by removing it actually undermines the child's right to neutrality, or indifference. A study which revealed widespread apathy towards certain aspects of the school's design is an important discovery and could well be revealing in itself; not something to be avoided.

In addition to the possibility of central tendency bias, McBurney & White (2009) indicate that the use of the Likert scale is often criticised for its susceptibility to acquiescence bias, or agreement with statements as they are presented. Furthermore, Greenleaf (1992) highlights a risk of social desirability bias which amounts to an individual pursuing a course of positive self-portrayal.

With regard to acquiescence, the studies were constructed so that children are not responding to positive statements which were suggestive of a desired level of agreement. These studies were designed so that a situation, activity or object was mentioned without description and the child was merely asked to point out which image best sums up how they feel or perceive themselves.

In particular questions regarding the children's perceived aptitude were susceptible to social desirability bias. This could be measured to some degree against the responses of the teacher for the same child but is certainly a recognised risk inherent in the study.

For clarity, a distinction was made between the smiley faces used for positive and negative feelings and the symbol used for perceptions of behaviour and ability. Another established symbol in schools is the star, synonymous with achievement; this was chosen using a scale of one star through to five stars which would refer to a particularly positive perception. The use of both these symbols is explained in Figure 5-1 and the respective rating used in the analysis described later.

Whilst it was acknowledged that a zero rating linked to a child's choice of one star, for example, may be confusing, this analysis rating was not visible to the child during the studies.

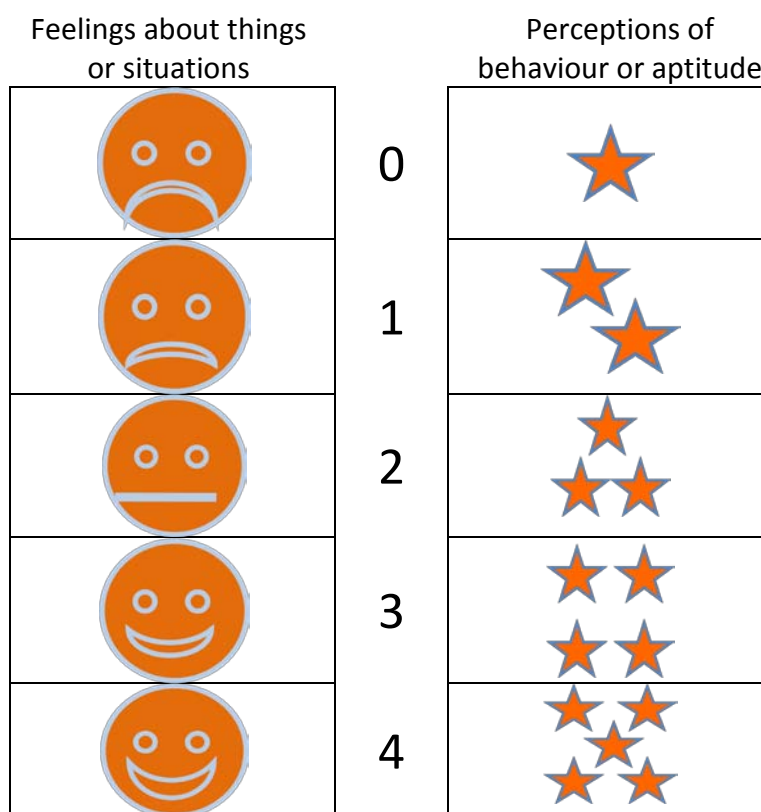






Figure 5-1 Likert Scales used for feelings or perceptions of ability and behaviour, with its associated rating used in the analysis

5.1.4.1.1 A note on the use of Likert in the analysis

In this thesis statistical analysis is minimised to reflect the nature of the research which approaches a relatively small sample size (104 children) with whom detailed qualitative individual study was carried out. The use of Likert scales, as Zeisel (2006) and Cohen et al. (2000) point out, is subject to disagreement in the research community centring on whether what is essentially an ordinal scale can be treated as an interval scale and therefore be subject meaningfully to statistical methods.

In this thesis the use of the *mean* of responses to different Likert items, or individual images of schools, for example, is used for comparative purposes described later. To be statistically legitimate, the important question is whether the difference in the children's intensity of feeling

between  and , for example, is equivalent to the difference between  and .

While this is not immediately verifiable, in statistical terms Foster, Barkus & Yavorsky (2006) note that the item responses should follow a normal distribution to allow the results to be treated as interval data, therefore warranting statistical attention. Following Foster et al.'s generally recognised recommendation, the use of both skew and kurtosis tests reveal over 90% of the 150 distributions generated by individual *items* (e.g. images) demonstrate the properties of normal distributions, supporting the use of *mean* responses within the analysis.

5.2 The studies

5.2.1 Study 4: Identity cards

5.2.1.1 Description

The *Identity Cards* study used photographic images of the school environment to reveal which physical aspects of the school the children identify with. It is recognised from Chapter 3 and 4 that the significance of the physical school is unlikely to be interpreted by the children as purely aesthetic/physical entities. It is predicted that a child's Likert rating may prove to be a judgment of the aesthetic quality of the feature but it is also anticipated to reflect overriding feelings or identification towards the human layer, i.e. the social or the cultural school.

The photographs were chosen by the researcher and the respective headteachers to present a range of examples of the physical school and were then categorised by their content. Firstly they were grouped under the following headings: architecture, furniture, objects, communication, and decor. The purpose of this first categorisation was to assess whether the children's belonging related more or less to certain design features. For example Chapter 4 suggested that architecture is more remote from the child in terms of daily physical interaction. The type of study, relying on children's concentration and on availability of time, necessarily limited the number of photographs which could be used and so it was anticipated that the results would provide supporting evidence rather than verification of earlier findings.

Secondly each image was allocated three ratings on a scale of 0 to 3 for the aesthetic/functional, the social, and the cultural nature of the content. Chapter 3 described the layering of messages and meaning through use and the relevance of association in children's relationships with the physical school. The aesthetic, cultural and social classification was intended to investigate these. The playground, for example was given the highest rating of 3 for its social content. It was decided that if the maximum possible score was increased to 5 it would prove too difficult to make a

meaningful distinction between 3 and 5, for example, implying that a narrower scale was appropriate. These ratings were validated by the headteachers at the relevant schools.

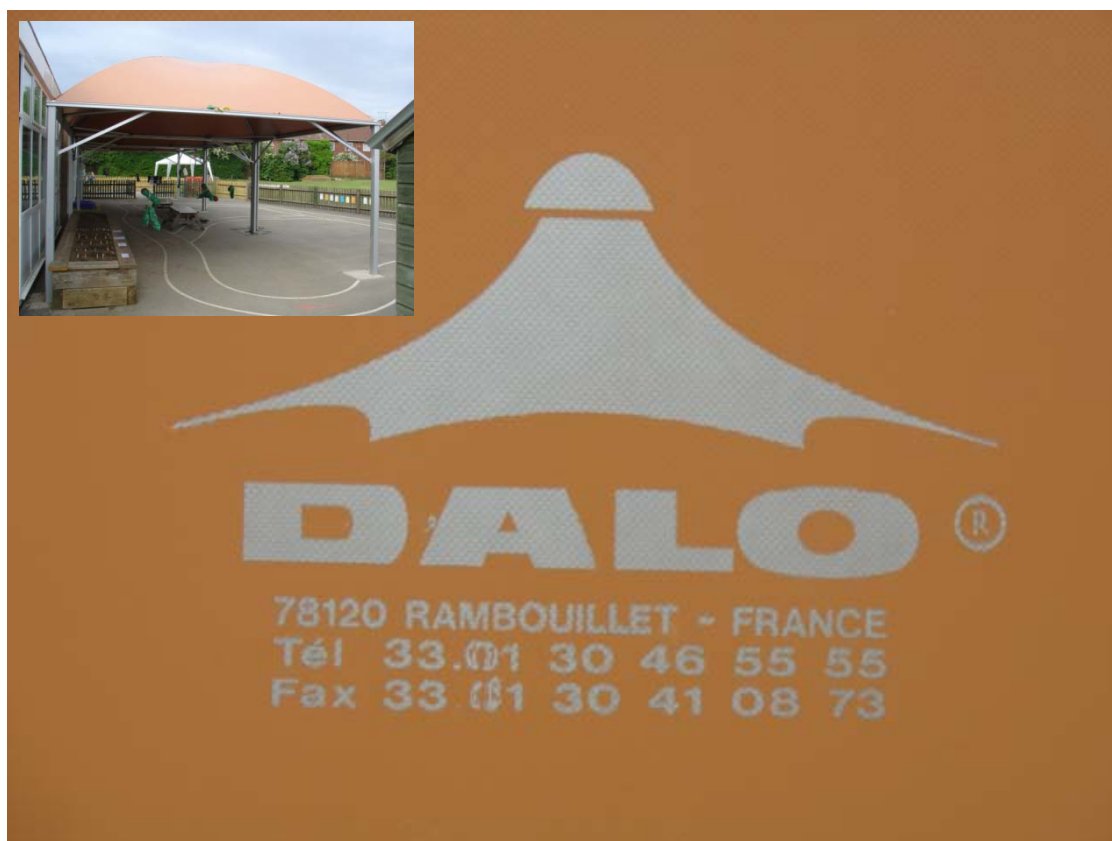


Figure 5-2 Example of Identity Card Image of the logo on the Canopy outside the Year 1/2 classroom (Inset)

A further feature of the study was to evaluate the child's intimacy with their (visual) physical environment and therefore the nature of the photographs was deliberately obscure to appraise the child's recognition of features. Figure 5-2 illustrates one of the images used with the School S Pandas depicting the logo on the canopy outside their classroom. The inset shows the full canopy but the close-up image was chosen to appraise the detailed visual knowledge of the child. Calculation of a child's recognition and understanding is described in Appendix 8.

The process was reviewed after four children had taken part and, based on general observations of concentration, it was decided that twenty photographs was approximately the right amount to enable a range of images to be used without losing the child's interest and attention. It was also important to be able to complete the study within a manageable timeframe which, in practice, took place across two or three school days with each class.

The photographs along with their categorisation are shown in full in Appendix 7.

Remembering that this study was designed to assess a child's sense of belonging, it needs reiteration that the basis for this assessment is visual. Many, including Ferreira, Mota & Pons (2001), argue that the sense of sight is the most critical to the human species with significantly more of the brain's processing capacity allocated to it. In addition, looking at images potentially elicits responses based on the sounds or the textures associated with what the children are viewing: 'In a glance we perceive a whole set of characteristics of an object: its distance, its motion, its colour, its shape, its size, its texture, its brightness and its transparency (Ferreira et al., 2001, p.25).'

However, it is recognised that, with time available, the study could be repeated to directly question each of the senses using textures, sounds or smells from around the school.

It is also acknowledged therefore that this study will probably not return a true picture of belonging for a visually impaired child. Reviewing how well children generally respond to and cope with the study was an important part of the assessment.

5.2.1.2 Informing research

The use of imagery in this way is a form of visual ethnography called photo elicitation and which Harper (2002, p.13) claims 'evokes information, feelings, and memories that are due to the photograph's particular form of representation.' He argues further that, 'the photo elicitation interview seems like not simply an interview process that elicits more information but rather one that evokes a different kind of information (p.13).'

Harper (2002) determines that using visual images in research uses a greater capacity of the brain than verbal methods and consequently reaches deeper into the human consciousness. This is a central concern given the stated limitations of previous conscious studies.

He concurs generally with Berger (1992) who explains the relationship between photographs and memory:

Memory is a strange faculty. The sharper and more isolated the stimulus memory receives, the more it remembers; the more comprehensive the stimulus, the less it remembers. This is perhaps why black-and-white photography is paradoxically more evocative than colour photography. It stimulates a faster onrush of memories because less has been given, more has been left out... (pp.192-93).

Considering the broader field of visual ethnography, Pink (2007) describes the stimulation of the subsequent conversation between ethnographer and interviewee, developing different perspectives of reality. This aspect of the research method was not an essential feature of the study although the essence of these discussions was recorded as anecdotal material and there is evidence of how images can be perceived in different ways. This is described in Section 5.6 and is essentially an important consideration in how individual children can perceive the same aspects of the physical school in different ways.

5.2.1.3 Standardised instructions

The study was carried out with one child at a time and separately from the rest of the class. This was to minimise the potential for a child's responses to be influenced, informed by perceived limitations of previous studies. It was explained to each child that the purpose of the study was to find out how they feel about different parts of the school, without giving examples or prescribing what is meant by feelings, beyond the smiley faced images illustrated in Figure 5-1. The study was carried out as informally as possible and it was reinforced with the children that their feelings were important and that there were not any right answers.

The five smiley faces, illustrated in Figure 5-1, were presented on cards and lined up on the table; the photographs were introduced to the child one at a time. First of all they were asked if they recognised the photograph. This was asked casually and recorded slightly later than the answer was given in order to minimise its perceived importance and to avoid the child feeling that they had failed a test if they did not recognise it. If the image represented an object with a particular meaning or function it was also recorded if the child expressed an understanding of this. Once the children knew that it was a study which involved images from around the school, as a rule they did not need to be asked to try to identify them.

At this point, if the image had not been recognised, it was described in a matter of fact manner in order not to indicate any feelings the author had towards it. The child was then asked to point to the face which best described the way they felt about it.

The chosen face was recorded on a piece of paper quite openly along with any comments or conversation which followed. The child was asked for their permission for the comment to be noted down, explaining that what they said was interesting but would probably be forgotten if it was not recorded.

5.2.1.4 Calculating belonging

The results of the Identity Card study provided the basis from which to calculate a measure of belonging for each child. The belonging measure is derived from the individual's cumulative responses to the photographs. This was then compared with the maximum possible score and initially shown as a percentage.

Take for example the image of the School S Code, shown in Figure 5-3, which outlines the school rules and is placed in the hall.

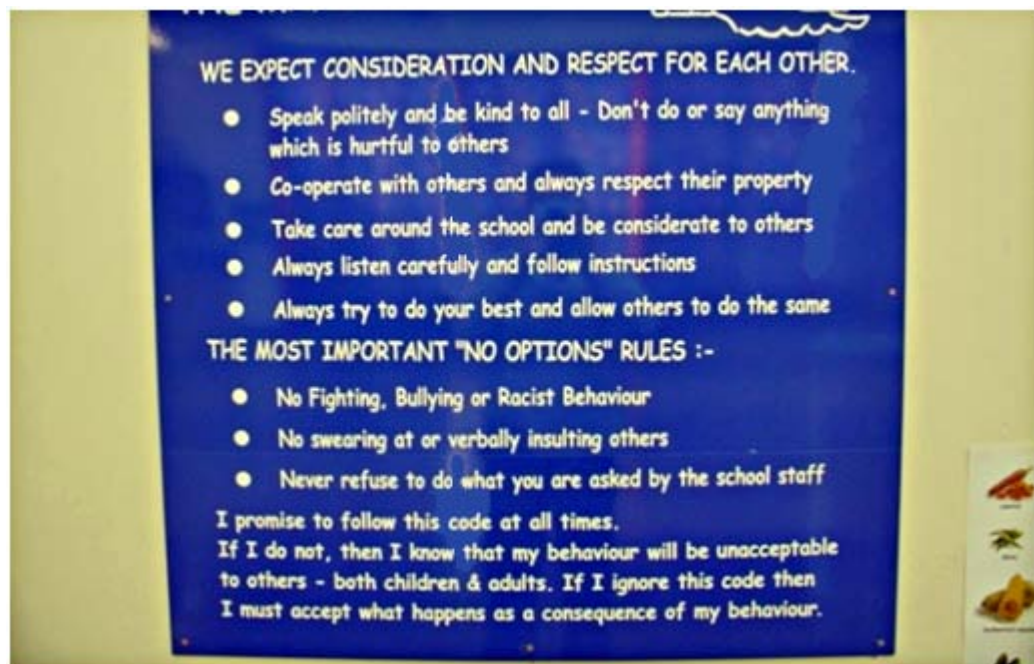


Figure 5-3 The School S Code

Beth could respond to the image by choosing the face linked to a rating of 2 on the Likert scale, as shown in Figure 5-4. This would represent her identification with the School S Code which is indicated as 2 out of a possible 4 or, as Figure 5-4 explains, 50%.

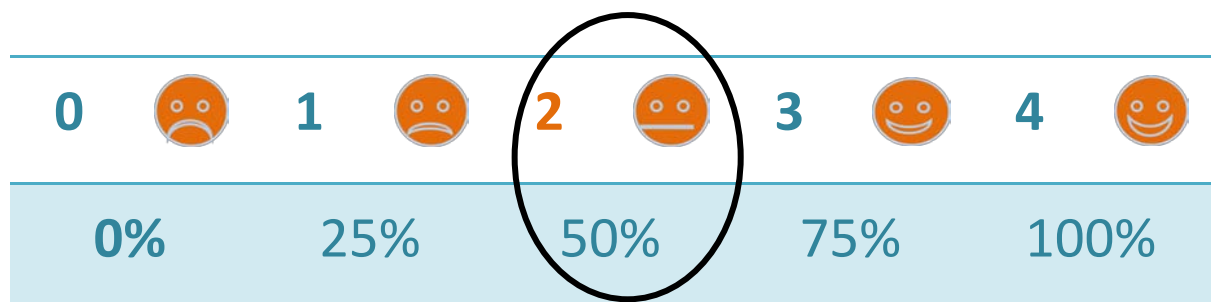


Figure 5-4 Example: Beth's Likert Scale Selection for the School S Code

If, for example, a child's identification with five images is 50%, 75%, 75%, 100% and 25%, their overall measure of belonging is calculated as the mean of these, i.e. 65%.

5.2.1.5 Calculating social, cultural and functional/aesthetic belonging

In Section 5.1.5.1, the rating of pictures based on their social, cultural, and aesthetic content was described. These ratings, validated by the head teachers, were used to indicate belonging in relation to the physical and human layers of design.

Taking the example of the School S Code of Conduct, this was rated on a scale of 0 to 3 as Figure 5-5 shows.

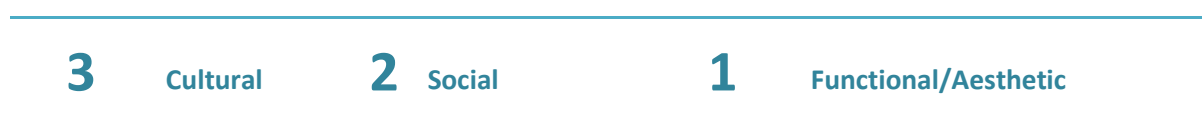


Figure 5-5 Rating of the School S Code - Cultural, social and functional/aesthetic

The belonging calculation can therefore be split into belonging to the cultural school, the social school and the functional/aesthetic school. Appendix 8 outlines how this is calculated.

Many of the images used were specific to each class and therefore comparison between classes and, in particular schools, needed to be carefully considered. To compare a child's sense of belonging of 62.5% in the School A Turtles with a child with a sense of belonging of 83% in the School S Pandas is tenuous and subject to criticism.

For this reason, the class results are presented as an index for intra-class comparison. The mean belonging for any of the classes, therefore, is given as 100 and the children's results are shown in relation to this mean. It is then possible to show the range of results and the results of particular groups like boys and girls, year 1 and year 2, and make comparisons class by class. Calculation of this index is also illustrated in Appendix 8.

5.2.2 Study 5: Class social maps

5.2.2.1 Description

The objective of the study was to create a social map of the class indicating where children are positioned within the class social circle and what types of relationships are prevalent. The position of the child relates to both centrality, i.e. how popular they are with the other children, and membership of any cliques which may exist. Cliques fall into the broader analysis of the types of relationships such as close friendships, relationships which show mutual disinclination and

unreciprocated friendships. This study will provide a social context with which to evaluate the children's *identity card* responses.

It was anticipated that the Year 1/2 classes would be less questioning about why they were completing these maps and that Year 5/6 would require a more concrete purpose for the study. In reality, the preceding studies and time spent with the class were essential for building trust. This trust, in addition to the leading role of the teacher in the exercise as someone they know well, enabled the study to take place without any issues.

5.2.2.2 Informing studies

Social network analysis is a research method which allows many different aspects of a social network to be established; Knoke & Kuklinski (1982) identify the analysis of personal relationships, financial transactions, communication, interaction and movement as some of the possible motivations.

The analysis presented here is a less complex, or one-mode, form solely interested in the popularity of the children within their class peer network. Wasserman & Faust(1994) describe: 'In the standard sociometric data design, a number of actors are presented with a list of the names of other people in the actor set, and asked to rate each other person in terms of how much they "like" that person (p.36).' It is noted that efforts to establish *stars* and *isolates* within social networks have an established tradition (Moreno, 1934) although it is claimed that such social network research methods has only rarely been applied with children (Sanson, Finch, Matjacic & Kennedy, 1998).

Overall, Rodkin & Hanish (2007) argue that placing children in the centre of their social system, as this study proposes, is a powerful method for understanding children's social reality.

5.2.2.3 Standardised instructions

The social mapping process required each child to place the names of all the children in their class on an A3 map which showed the children they feel the closest to and the children they feel the least close to.

Figure 5-6 replicates the A3 page of concentric circles each of which contains smaller circles. The numbers shown in the circles were not on the pages given to the children but, as will be described, were used to rate the closeness of the relationships.

An empty map was given to every member of the class. At the centre of the map they were asked to write their name and then in the adjoining four smaller circles to write the names of the four children who they felt were most important to them. Similarly moving out from the centre to the next ring they were asked to write the names of the children who were important to them but not quite as much as the first four. This continued until they had filled in the names in the outer circles which represented the children who they felt they were least close to.

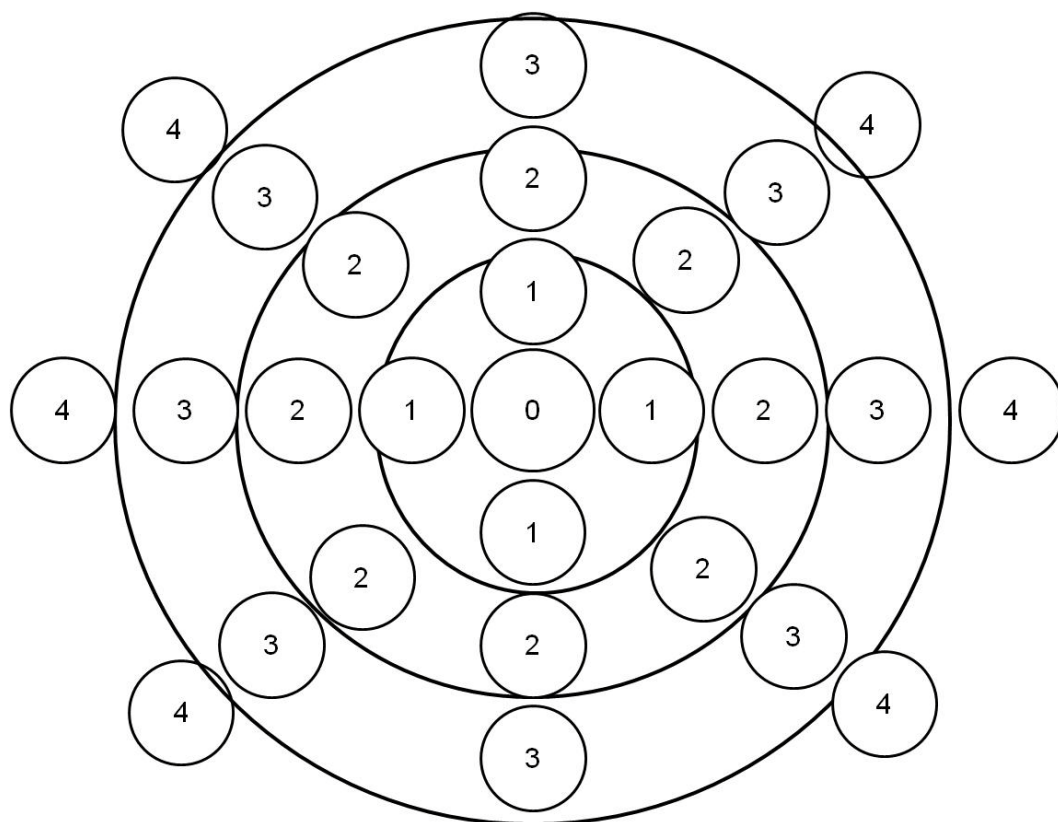


Figure 5-6 Example of social chart completed by each child and the numerical rating associated with each position

The study was carried out as a class with the assistance of teachers and learning assistants. Occasionally it was completed on a one-to-one basis if a child had missed the class exercise or there was a possibility that the child might be disruptive during the study. A high degree of sensitivity is required for this type of study the wording of the introduction must be carefully considered. Keeping an eye on the children's behaviour whilst they are completing their maps is equally important.

Finally, if a child did not wish to take part they were not forced to do so and incomplete maps were acceptable and managed in the analysis process.

5.2.2.4 Limitations

It is acknowledged that this study provides a snapshot of the class relationships which is dependent to a degree on the circumstances on the day of the study. For example two children who are normally good friends may have had an argument in the playground just before they completed their social maps. There is also the risk of children's responses being influenced either directly or indirectly by other children. One child may be looking over the shoulder of another child to see where their name is on that child's map. They may be asking or even telling the child where to place names. It is also possible that the child will subconsciously add the children who are sitting closest. There is also the factor of gender which may stop children putting someone from the opposite sex in as one of their closest friends in a public arena. The studies in Chapter 3 and 4 indicate that some form of gender divide would be expected.

However, it was anticipated that the main effect of both the day's circumstances and influence from other children would be mostly limited to the switching of the individuals identified as the most important with those identified as the next most important.

5.2.2.5 Developing a class social map

With a map from each child, an overall picture of the class social network was obtained by aggregating each child's responses. Appendix 9 details how each child's social position is calculated and how social circles for each class have been devised so that they are directly comparable irrespective of the number of children in each class. The maximum possible radius of any social circle is 30 which would represent a child who is rated 1 by every child in the centre and a child who is rated 4 by every child on the outer edge. If one class' social circle is 9.4 and another's is 10.4, this indicates that the least central child is further out and it is potentially a less socially inclusive class. However, understanding how the other children are distributed within each social circle is necessary to understand the true picture.

5.2.2.6 Graphical representation

Graphical representation of the social circle is useful for comparative purposes. The method used, and which is applied throughout the analysis of the results, is to split the class into thirds. If, for example, the class social circle is calculated to have a radius of 12, a perfectly evenly distributed class will mean that the central third of the class will occupy a social circle of radius 4, i.e. $12/3$. Adding the middle third of the class will create a social circle of radius 8, i.e. $12 \times 2/3$ (See Figure 5-7).

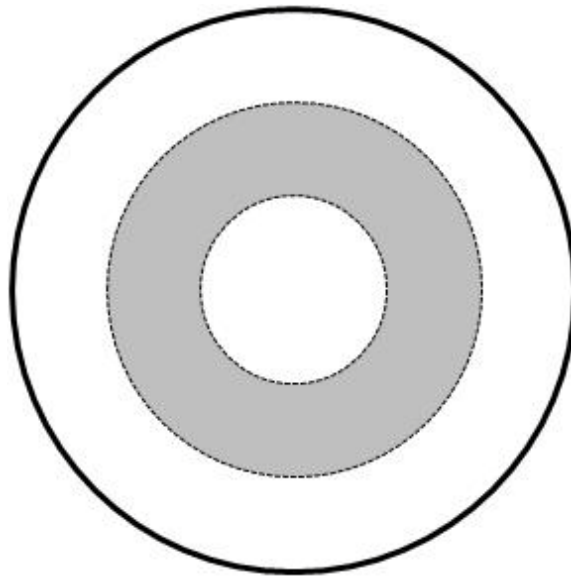


Figure 5-7 Graphical representation of class social circle – splitting into thirds

So far this is purely a theoretical representation of a class in which it is assumed that some children are more socially central than others. This will be shown to be a realistic assumption of how classes work in practice and it will be seen that the scenario where children are all equally central is not an accurate portrayal.

Breaking the circle up into equal thirds, measured along the radius, will be used to show how the children are distributed within this circle. As well as showing classes which are evenly spread it will also indicate classes with very strong social centres and isolation where it occurs. The three parts of the circle will be referred to throughout as the central, middle, and outer circles.

Earlier it was suggested that a degree of gender divide in the class social circle should be expected. Therefore, graphical representation will also be used to present the social circles separately for girls and boys. A representation of the girls' social circle, for example, would include both boys and girls but would be based only on the maps which the girls had produced. This circle would invariably vary in size from the overall class circle and indicate important differences in the way girls interact socially. Equally it is anticipated that the boys' social circle could reveal characteristics particular to boys.

5.2.2.7 Assessing relationships

The social mapping process allows an assessment of the types of relationships existing in the class. Comparing Simon and Lucy once more, their respective ratings for one another shown in Table 5-1 indicate the types of relationship they may have.

| Simon | Lucy | |
|-------|------|---------------------------|
| 1 | 1 | Close mutual friendship |
| 4 | 4 | Mutual disinclination |
| 1 | 3/4 | Unreciprocated friendship |

Table 5-1 Relationship types based upon Simon and Lucy's respective ratings of each other

Assessing the number of these types of relationships across the whole class and in which third of the circle they occur provides another tool for evaluating the social context of the class.

Referring to a scenario in which Simon places Lucy in a circle with a four rating and Lucy reciprocates by also placing Simon in a four-rated circle, this is referred to as a mutual disinclination. It is possible that this relationship is antagonistic and involves dislike but, equally, it could merely represent disinterest. For this reason a neutral term is used.

Finally it is revealing to look at whether Simon and Lucy's ratings of each other match, irrespective of whether they indicate positive or negative relationships. Where a child allocated a two, for example, to another child and that child also gave them a two, there is a match in how both children perceive their relationship with each other. Looking at how many matches there are for a child is an indicator of how socially aware each child is. This can also be viewed in relation to the child's social position and used to compare the class as a whole with other classes.

5.2.3 Study 6: Good bad happy sad

5.2.3.1 Description

The objective of *Good Bad Happy Sad* is to understand children's positive, negative or neutral feelings at school in different situations and in relation to different aspects of learning and their general school experience; earlier chapters have predicted that well-being at school is directed towards concerns of behaviour and achievement, for example. The study evaluates academic and behavioural self-concepts which could then be related to the child's social position and their responses to the physical school in the *identity cards* study. These academic and behavioural responses of the children are also compared with the teacher's perceptions of each child to gauge how closely related these perceptions are.

For each child the following measures were recorded against the Likert scale previously shown in Figure 5-1:

- Perception of ability (child)
- Perception of behaviour (child)
- Happiness learning
- Happiness around school
- Perception of ability (teacher) – i.e. teacher’s perception of the child’s ability
- Perception of behaviour (teacher) – i.e. teacher’s perception of the child’s behaviour

5.2.3.2 Standardised instructions

The study was completed individually with each child. The purpose of the study was explained verbally. The child was presented with a series of school subjects (literacy, numeracy, for example) and situations or locations (playground, lunch). For each they were asked which symbol best described their feelings or thoughts about these subjects or situations/places. The five point Likert scale illustrated in Figure 5-1 was used with the smiley faces for expressed happiness and the stars were used for perceived ability or behaviour.

The study was carried out twice, once asking the child how good they think they are at each, either in terms of behaviour or ability, depending on the described situation, and the second time asking how happy the child feels in each situation or whilst doing each activity.

| Not Very Good | Okay | Very Good |
|---------------|------------|--------------|
| ★ | ★ ★ ★ | ★ ★ ★ ★ ★ |
| | Dinner | Assembly |
| | Playground | Drawing |
| | Tests | Classroom |
| | | Numeracy |
| | | Writing |
| | | Music |
| | | PE |
| Nathan | | |

Figure 5-8 Good, Bad, Happy, Sad - completed ability/behaviour page

The study was completed using a PowerPoint slide on a laptop and the icons were dragged and dropped according to the child's responses, often by the child themselves. This is illustrated in Figure 5-8.

Throughout the study any anecdotal evidence or explanations offered by the child were written down with the consent of the child.

This was carried out as the last study because it is recognised that certain children will need to have built up a degree of trust with the interviewer in order to avoid issues of acquiescence (McBurney & White, 2009).

5.3 Describing the classes – Year 5 and 6

This section will discuss the nature of the social circles for both Year 5/6 classes and the relationships which are evident within these social circles. It will then go on to consider these findings in relation to children's belonging and their self-concepts relating to the cultural context of school. The Year 5 & 6 results are included in full in this chapter and refer to Year 1 & 2 results where relevant. The thesis is interested in how the culture exerts itself on individuals and therefore the Year 5 & 6 results are most relevant for this evaluation. The full appraisal of the Year 1 & 2 findings is included in Appendix 10.

5.3.1 School S: Year 5 (Barracudas)

5.3.1.1 The social circle

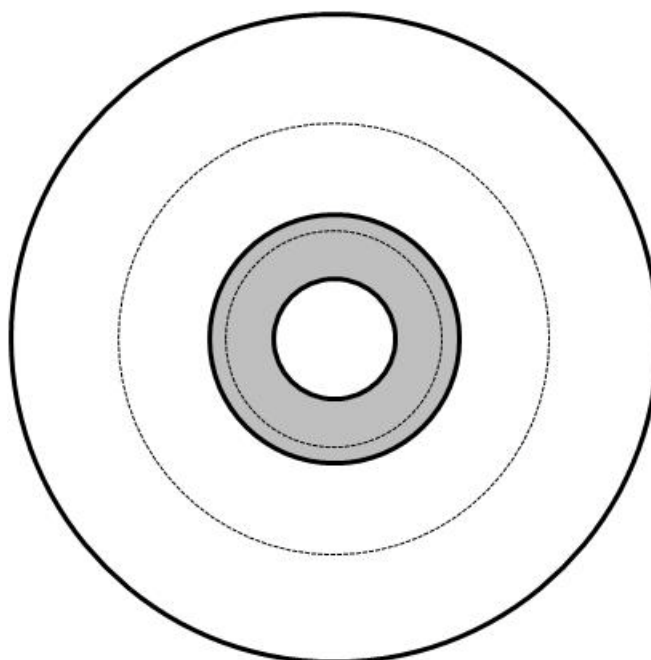


Figure 5-9 School S Year 5 Social Circle

The size of the Barracudas' circle shown in Figure 5-9 is 17.1 which is much wider than either of the Year 1/2 classes. If the ratings for the central child remained unchanged the maximum possible size of the social circle would be 19.8. This appears to be a phenomenon related to age and the polarisation of relationships. In this example the large social circle is indicative of two notably isolated boys.

It is apparent in Figure 5-9 that the middle and the centre of the social circle is compressed compared with both the younger classes and considerable widening occurs in the outer social

circle. The circle represents an amalgamation of the girls' and the boys' social circles and Figure 5-10 illustrates that gender is again a key determinant of the overall circle.

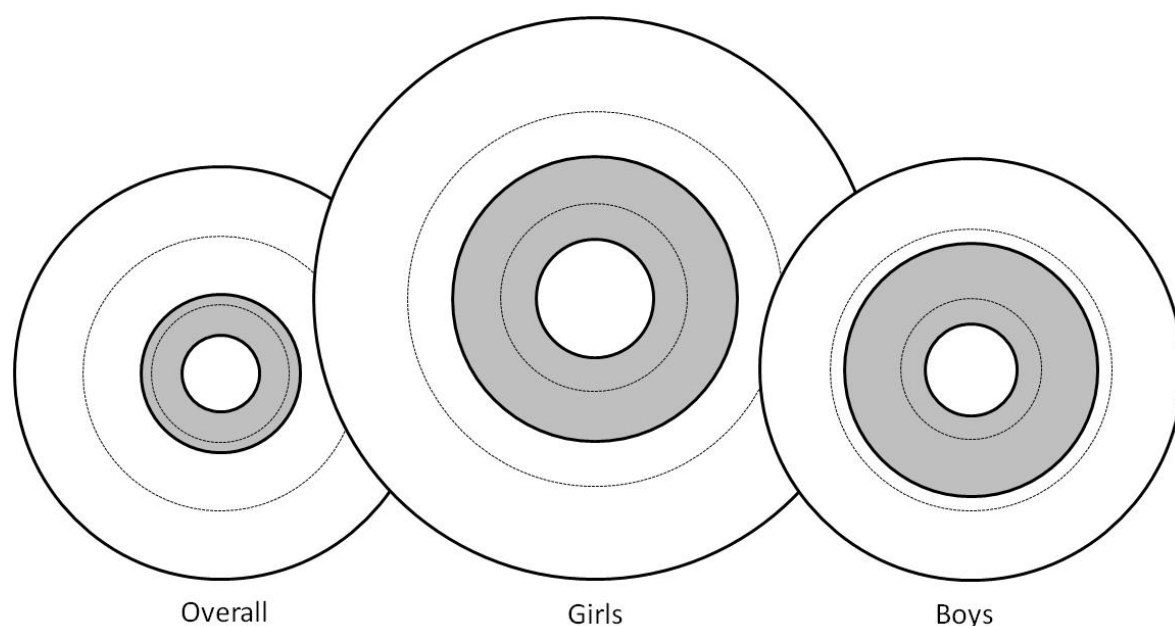


Figure 5-10 School S Year 5 Social Circle – by gender

Comparing the size of the social circles by gender, the girls' circle is 23.3 in radius where 23.3 is the position of the child, a boy, most distant from the centre. The next most outer boy is at 21.0.

The size of the girls' circle is predominantly the product of the ratings given to the children in the outer third which suggests that the girls in this class are more discriminating towards the least popular children.

The social circle according to the boys is only marginally wider than the overall class circle (17.5). The boys are less discriminating beyond their close friendships. The boys' social centre is very tightly knit, with the size of the central circle being 3.8 compared with the girls at 4.9. So, in the Barracudas, it is feasible that boys tend to focus on the children they like whilst the girls are perhaps more focused on the children they dislike. However, the outermost two children in the boys' circle are in fact boys which, similar to the other classes, suggest that boys are more willing to reject other boys.

Viewing the cumulative effect on the class circle, the social circle is smaller because the high and low ratings are spread more widely over all the children in the class, but the centre and middle have become highly focused. This suggests that even though the boys generally prioritise boys

and the girls generally prioritise girls, within this there is agreement across gender as to who are the most and least popular children, producing a relatively wide outer circle.

The younger Pandas at School S illustrated a less defined version of the same effect.

5.3.1.2 Relationships

Across the whole class, each child on average has a reciprocated close friendship with 2.6 children. This is 3.4 in the central circle, reducing marginally to 3.1 in the mid circle and 1.1 per child in the outer circle. This supports the conclusion of the strong yet exclusive nature of the social class and is consistent for boys and girls. These figures are considerably greater than either of the Year 1/2 classes pointing to the intensifying of the social dynamic with age.

A similar increase is also evident in the number of relationships which the children matched: on average 9.6 of their relationships representing 36% of the 27 relationships they have in the class. In the social centre this increases to 11.3 (42%) decreasing to 6.4 (24%). The highest number of relationships matched was 59% (boy); the lowest was 15% (girls).

On average, a child in the Barracudas class will have 1.5 mutual disinclinations which increase significantly over the social circle: this figure is 0.3 in the central circle, 1.6 in the mid circle and 2.6 in the outer social circle. This suggests a growing social antagonism as the children get older. The low figure in the centre in conjunction with its relatively condensed character would suggest a strong and harmonious centre, which is potentially cliquey and exclusive in nature.

5.3.2 School A: Year 5 and 6 (Class 3)

5.3.2.1 The social circle

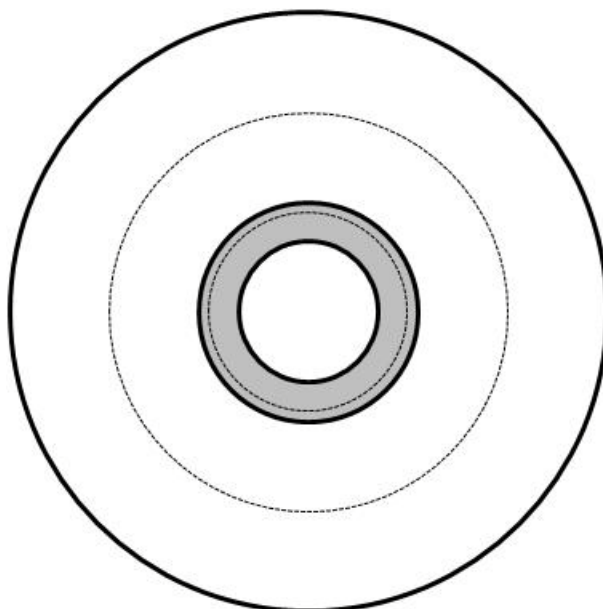


Figure 5-11 School A Year 5 & 6 Social Circle

The size of the Class 3 circle is 15.8, shown in Figure 5-11, which is again much wider than either of the Year 1/2 classes but smaller than School S Year 5. Reminiscent of the Barracudas, the outer section of the class circle is stretched and indicates the more exclusive nature of the older classes. However, compared with the Barracudas the centre is more relaxed and it is the middle circle in this case which is particularly tight.

In common with the other classes, the girls' social circle is much wider again (22.1). Though slightly smaller, it shows a very similar pattern to the School S Year 5 girls' circle; here the outer circle is stretched to represent approximately one half of the whole. Although the boys' social circle is also relatively wide (20.2), it is very evenly distributed and suggests a more relaxed class with fewer intense relationships. The comparative differences are illustrated in Figure 5-12.

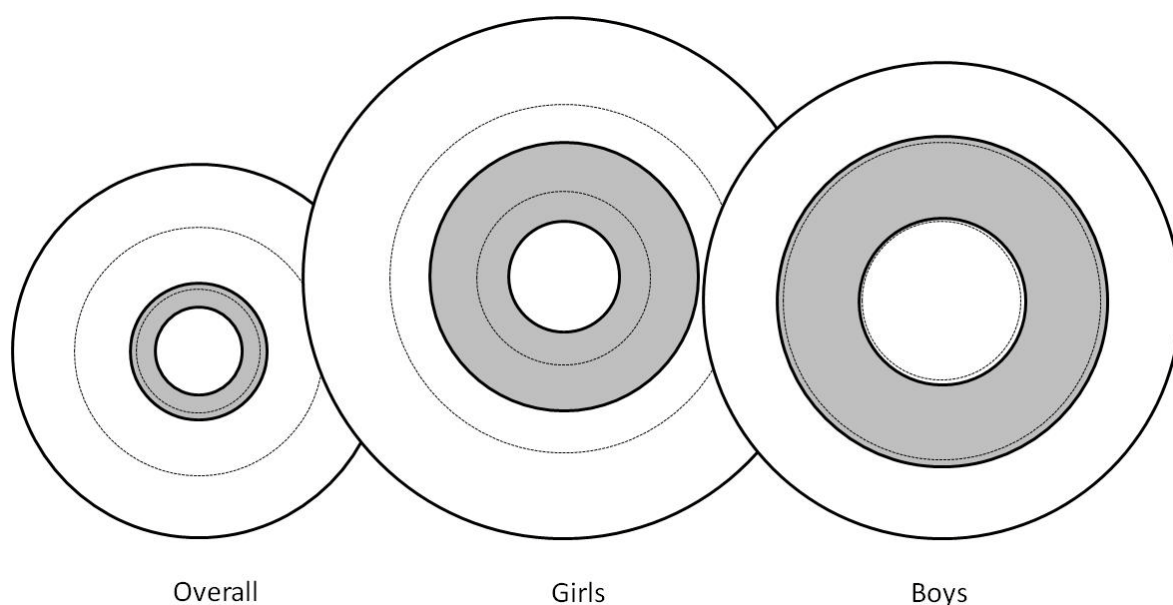


Figure 5-12 School A Year 5 & 6 Social Circle – by gender

5.3.2.2 Relationships

The relationships in the class corroborate the view that overall it is more relaxed in its social nature, particularly with regard to the social centre. Each child on average has a reciprocated close friendship with 1.9 children made up of 2.4 in the central circle and reducing marginally to 2.1 in the mid circle and 1.1 per child in the outer circle. Boys have a slightly lower number.

On average children in the class matched 34% of the 29 relationships they each have in the class. In the centre this increases to 12.7 (44%) and decreasing to 7 (24%) in the outer circle. These figures are very close to School S and similarly the most central boys show the highest figures.

On average, a child in Class 3 will have 1.5 mutual disinclinations. With a higher number in the centre and lower number in the outer circle, compared with the School S Barracudas, a slightly less cemented social nature of the class is apparent.

5.4 Year 5 & 6: Social position

Between the younger and the older classes, the social circle becomes stretched, i.e. children on the edge of the circle become more remote. This is a consistent feature which appears to exist irrespective of socio-cultural background. In both schools the centre and the middle circles remain similar in size and therefore it can be considered a phenomenon of social exclusion.

For children on the edge of the social circle, the position of the child can become untenable. For example, Daniel on the edge of the School S Year 5 circle was excluded as behavioural problems became unmanageable and the second outermost child eventually enrolled in a different secondary school from the rest of his classmates.

Reviewing the relationship between the *Good Bad Happy Sad* study and the older children's social positions indicates greater consistency between the schools, compared with the younger classes.

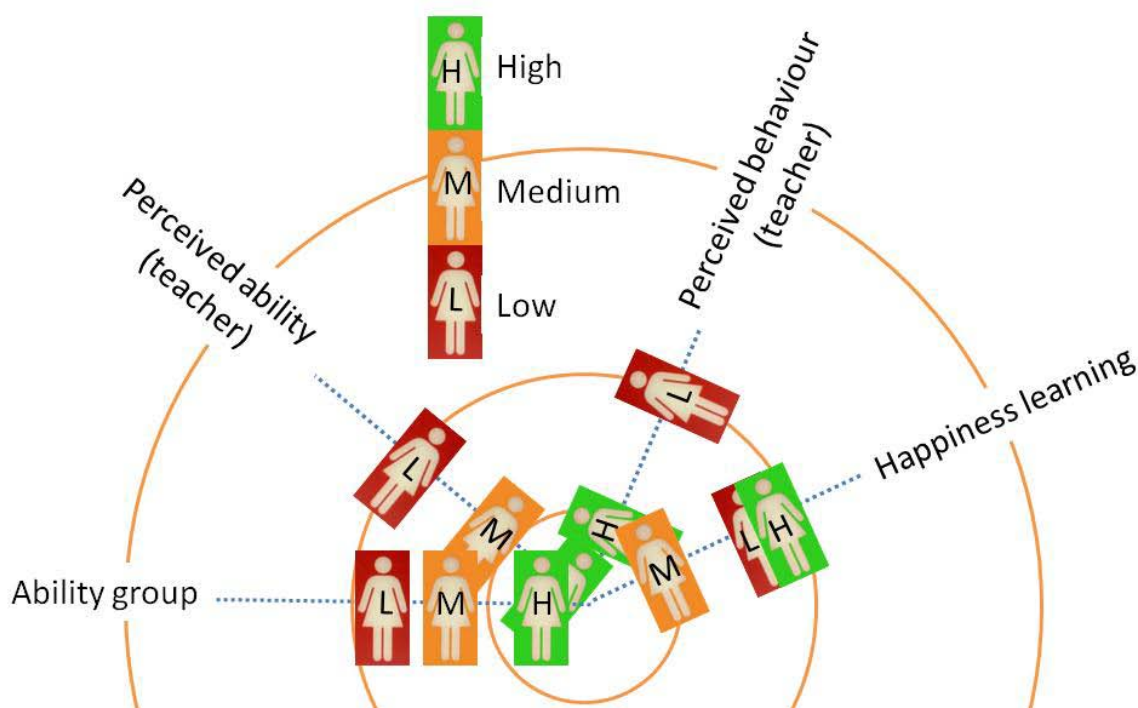


Figure 5-13 School S Year 5 girls - School context measures related to the social circle

Initially considering girls, those who are judged by the teacher to behave well are notably more socially central. This is most clear at School S, as illustrated in Figure 5-13, which shows a link between the teacher's high perceptions of ability and behaviour and social centrality. This includes judgments made about which ability group the child is in. In School A, it is most evident that for a girl popularity is linked with medium perceptions of ability. In both schools, a girl who is not perceived by the teacher to be of low ability or is not in the lowest learning group will be more socially central.

This suggests that girls' own perceptions can be a factor in their social positions and in School A it is socially advantageous to be average (Figure 5-14). However, in comparison with Year 1 & 2 girls,

the perceptions of the teacher are more emphatically linked to the girls' popularity and it is notable that children may well be using the teacher's judgments to form their own social choices. The difference in the impact of the girls' perceptions and the teachers' would also imply that children interpret their school experience differently from adults.

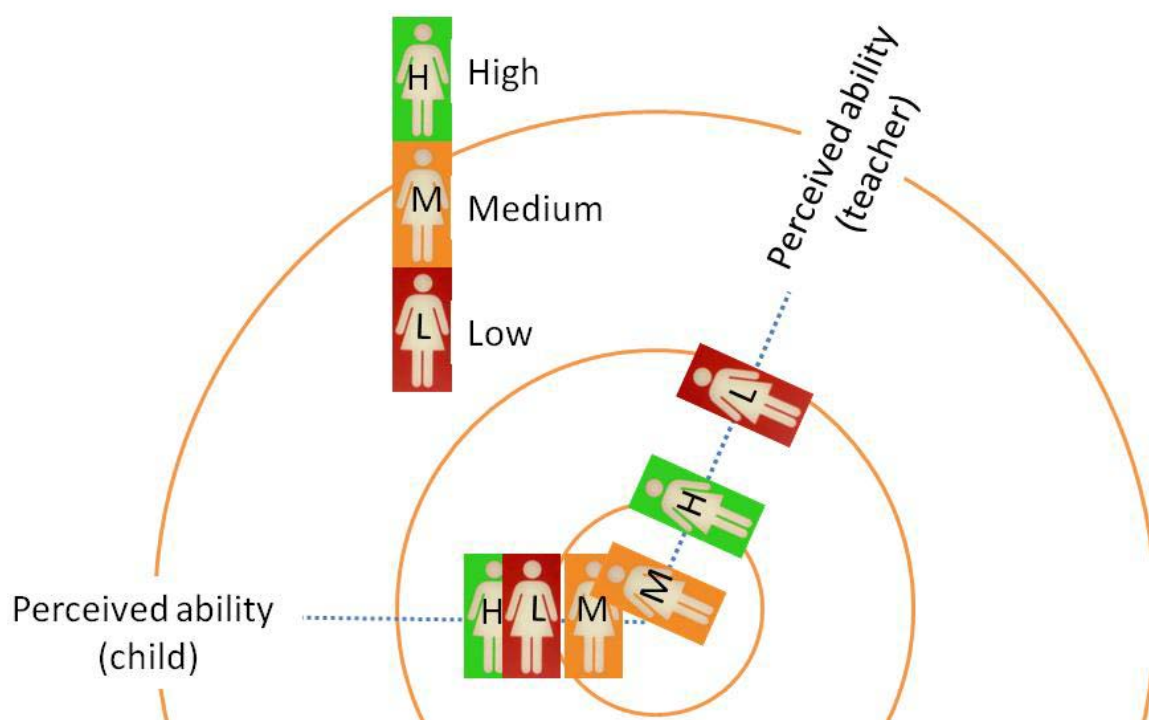


Figure 5-14 School A Year 5 & 6 girls - School context measures related to the social circle

The boys' results attest to the influence of the teacher on their social position to an even greater degree. If they perceive their own ability to be high, concurrently they tend to be more popular. This is very apparent in School A, shown in Figure 5-15, which indicates a contrast with the boys in the younger School A class who showed an opposite link to what might be considered culturally desirable dispositions. It is also at odds with some of the more rebellious comments made by the boys in the previous *conscious* studies.

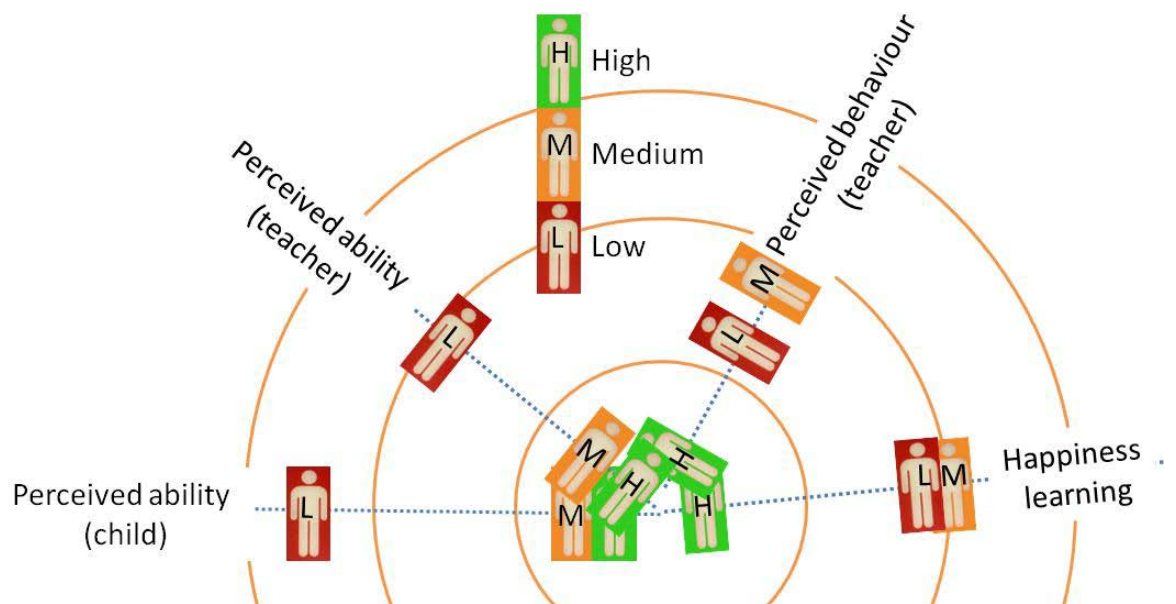


Figure 5-15 School A Year 5 & 6 boys - School context measures related to the social circle

In School S, which has been shown to be a more socially intense class, Figure 5-16 indicates the important link between the boys' popularity and the teacher's perception of them. Most resounding is if the teacher perceives the boy to behave well, or does not perceive them to be of low ability. The link between popularity and being in the highest group is also evident.

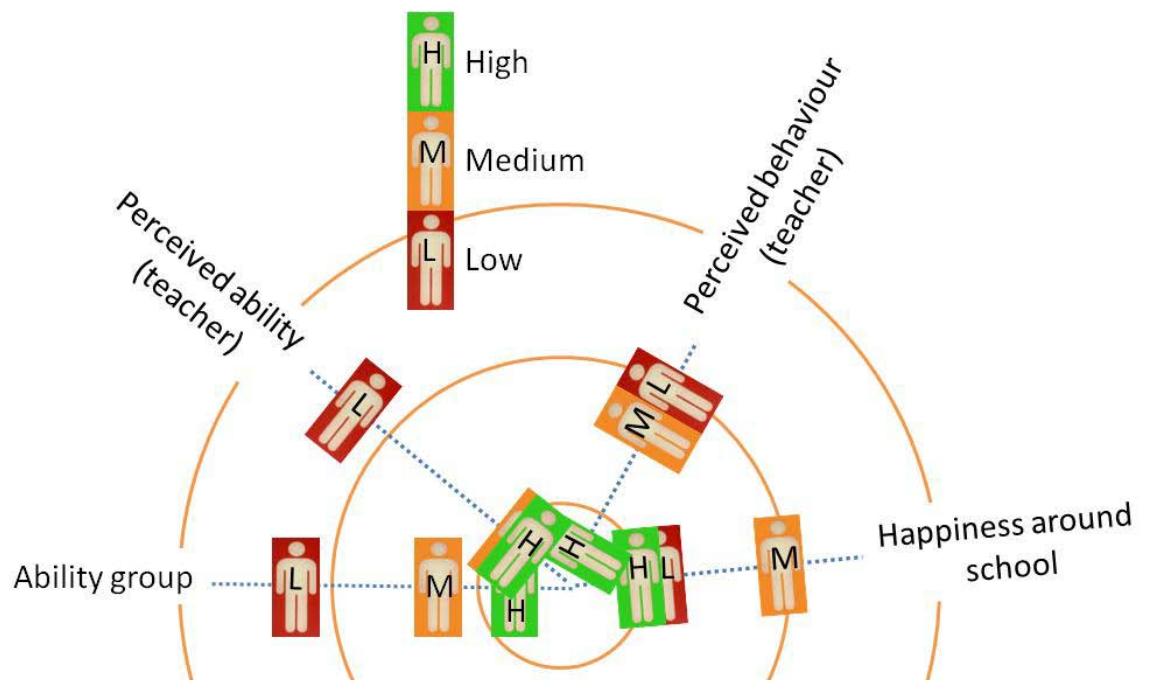


Figure 5-16 School S Year 5 boys - School context measures related to the social circle

These impacts are predominantly how boys judge each other and girls judge each other socially as quite distinct social circles based on gender illustrated. In School S, however, girls also favour boys in the higher learning groups.

The *GDBD* study in Chapter 3 suggested that conditioning and the use of aspects of the material school to support this was an objective, particularly discernible in the Year 1 and 2 children's responses in School A. Where a variety of conclusions could be reached relating to a child's popularity in Year 1 & 2, by the latter stages of primary school this research finds that children's social status is dependent on how they fit into the school culture, personified by the teacher.

5.5 Year 5 and 6 belonging

5.5.1 Gender and age

Common across both classes is that girls demonstrate a marginally higher belonging than boys. However, the studies in Chapter 3 and 4 highlighted disaffection from a number of the Year 6 boys at School A which is evidenced in their lower belonging. The Year 1 and 2 classes also demonstrated that either Year 1 boys and Year 2 girls, or Year 2 boys and Year 1 girls would exhibit the highest belonging. In Class 3 the same pattern is found whereby the Year 5 boys and the Year 6 girls show the greatest belonging. This indicates the existence of a balance of belonging established between the same gender based on age and reciprocity with the opposite sex.

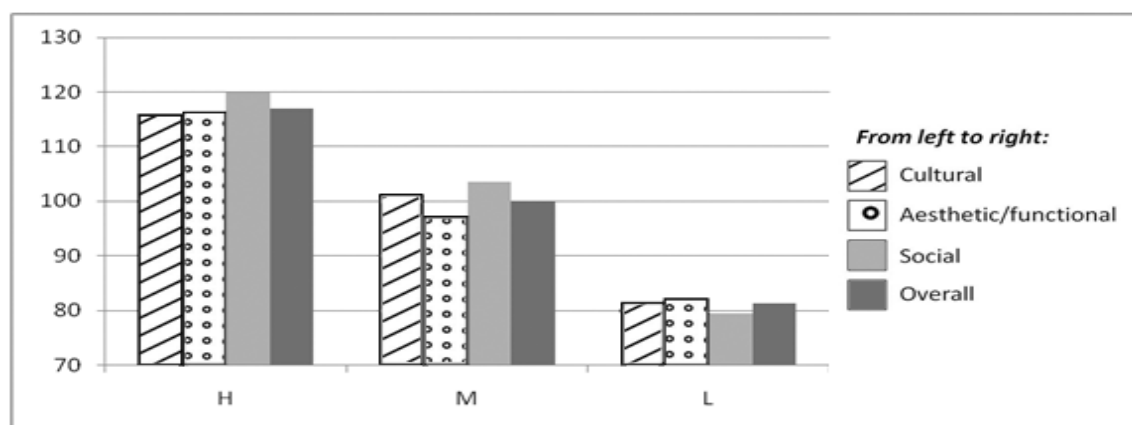


Figure 5-17 Belonging Index for School S Yr 5 girls shown for those with high, medium and low belonging broken down by cultural, aesthetic/functional and social physical aspects of school

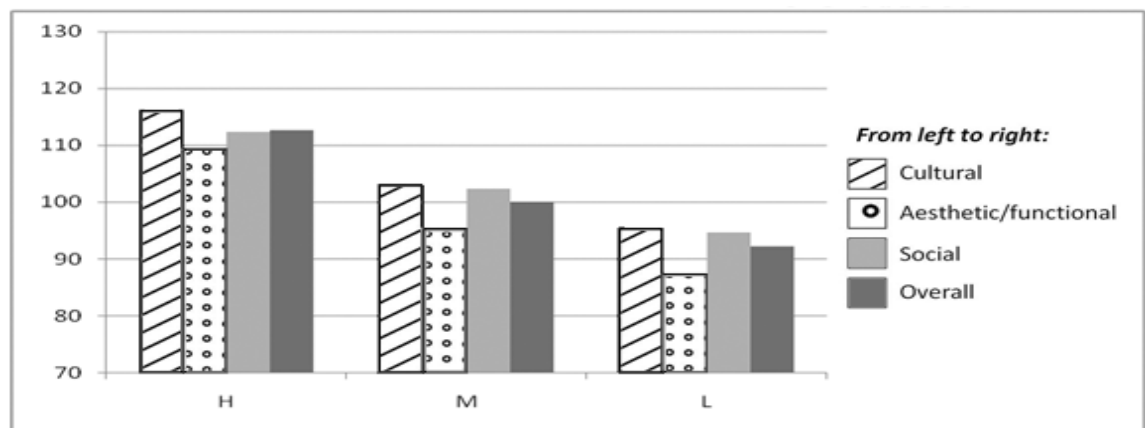


Figure 5-18 Belonging Index for School A Yr 5 & 6 girls shown for those with high, medium and low belonging broken down by cultural, aesthetic/functional and social physical aspects of school

In Figure 5-17 it can be seen that School S Year 5 girls exhibiting high belonging noticeably prioritise social elements of the physical school. As belonging declines positive identification with elements of cultural significance increases. It is also clear that inanimate objects become more important to a child's belonging for girls at School S who exhibit low belonging.

In School A, whether the child exhibits high, medium or low belonging, the relative importance of physical elements with cultural significance is consistent. On the other hand, the relative importance of social features increases as belonging declines. Shown in Figure 5-18, this is consistent with the School A Year 1 & 2 class although, unlike the Year 1 & 2 girls, girls in Year 5 & 6 do not show a relative increase in the importance of aesthetic/ functional features.

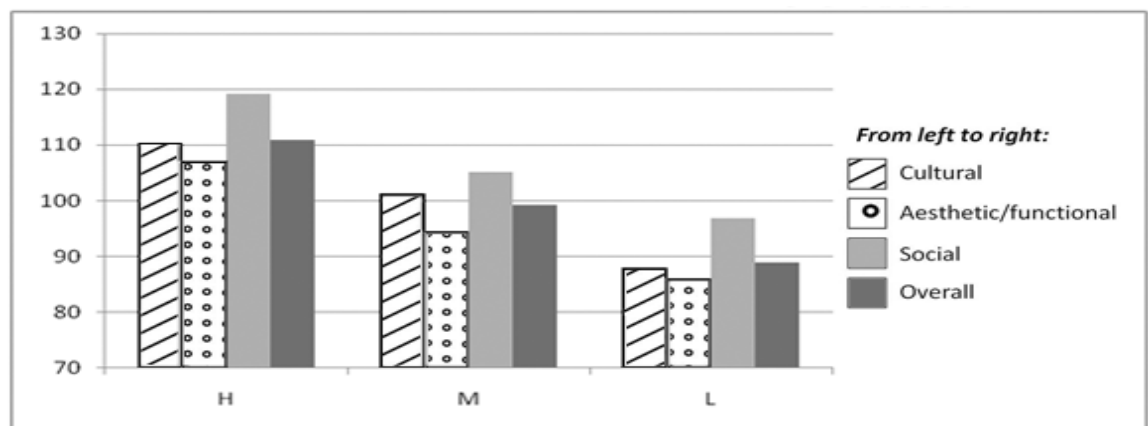


Figure 5-19 Belonging Index for School S Yr 5 boys shown for those with high, medium and low belonging broken down by cultural, aesthetic/functional and social physical aspects of school

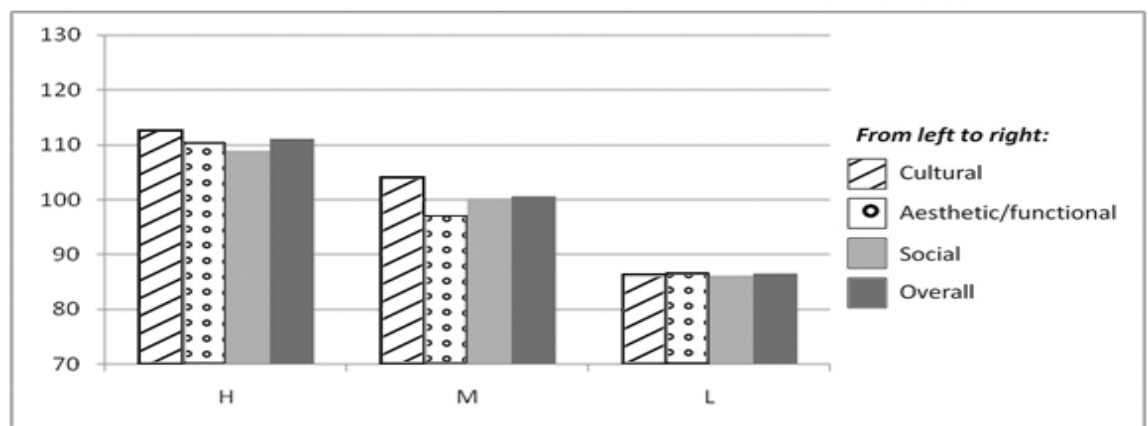


Figure 5-20 Belonging Index for School A Yr 5 & 6 boys shown for those with high, medium and low belonging broken down by cultural, aesthetic/functional and social physical aspects of school

Year 5 boys at School S verify the assertion of the social nature of the class by exhibiting belonging which is biased towards social features of the school (See Figure 5-19). Despite a slight increase of features of cultural significance for medium belonging boys, the overall balance between the three categories is largely maintained.

At School A a fall in belonging, shown in Figure 5-20, appears to be associated with an increase in the relative importance of cultural features at the expense of aesthetic/functional elements which then is reversed in favour of the aesthetic/ functional. Relatively, positive identification with social features is essentially unchanged which is consistent with the boys in School S despite being less significant on the whole.

5.5.2 Belonging and social position

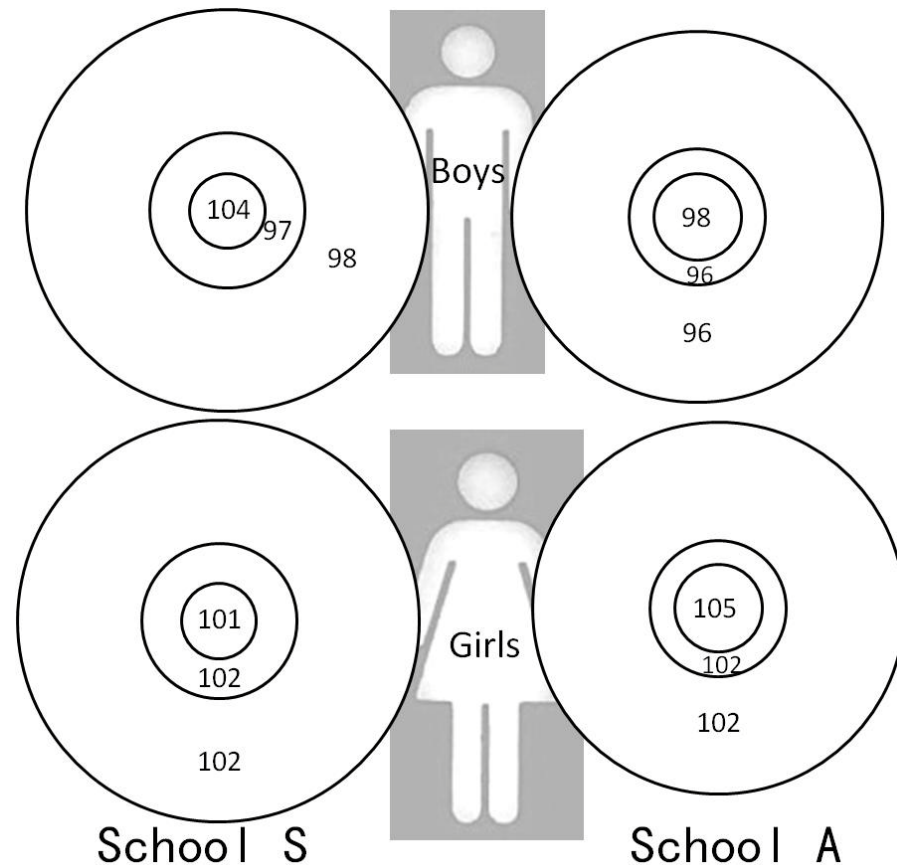


Figure 5-21 Belonging Index in relation to girls' and boys' social positions - Year 5 & 6

In Year 5 and 6, belonging is generally linked to the child's social position as it was for Year 1 and 2. However, while in three out of the four social circles belonging is highest in the social centre, Figure 5-21 shows that the results are less extreme than Year 1 and 2. This is despite the previously described intensification of the social character of the older classes and indicates that popularity with peers is perhaps less significant; other factors seem to become relevant to belonging, including the influence of the teacher.

Considering belonging at an individual level, for the most isolated boys in the Barracudas belonging is relatively high (112 and 100) and the social component of their belonging significantly higher at 122 and 111 respectively. This is consistent with one of the boys in School A Class 3 although other more isolated children demonstrate the opposite. It is noticeable therefore that expressed belonging is more extreme and varied in the outer circle but it is also an indication that socially isolated children may well be perfectly happy from a social perspective. This vindicates the consideration of other factors in belonging and directs the discussion of inclusion away from peer group popularity.

5.5.3 Behaviour

Earlier the relevance of perceptions of behaviour to social position was described. The evidence from the class suggests that whether it is the child's perceived behaviour, or the teacher's perception of the child, the impact on belonging to the physical school is marked.

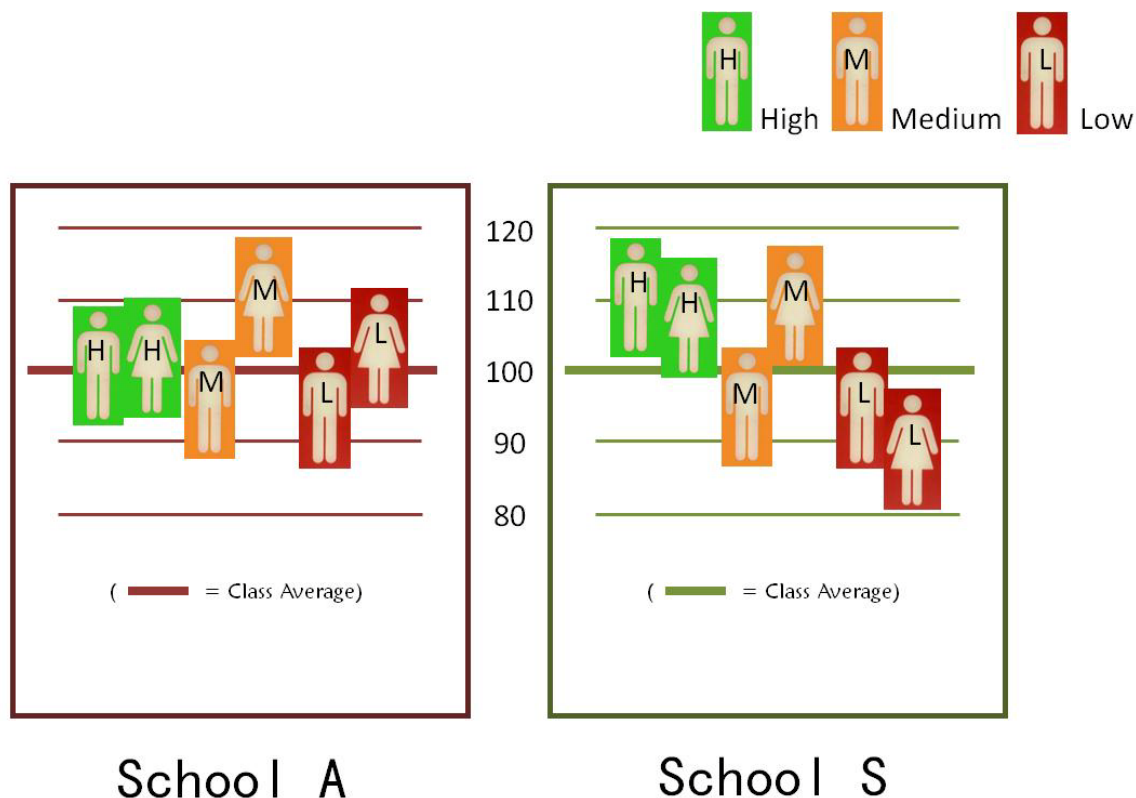


Figure 5-22 Belonging Index based on child's perception of behaviour (High, medium and low)
Year 5 & 6

This relationship is shown in Figure 5-22. In both schools the belonging of girls who perceive their behaviour to be average is the highest and School S girls' belonging particularly declines if their perception of behaviour is lower. It is visible for these girls that the social element of their belonging declines in significance. For boys, the effect of their higher perceptions of behaviour is clearer in its relationship with their belonging, which declines as perceptions of behaviour get lower.

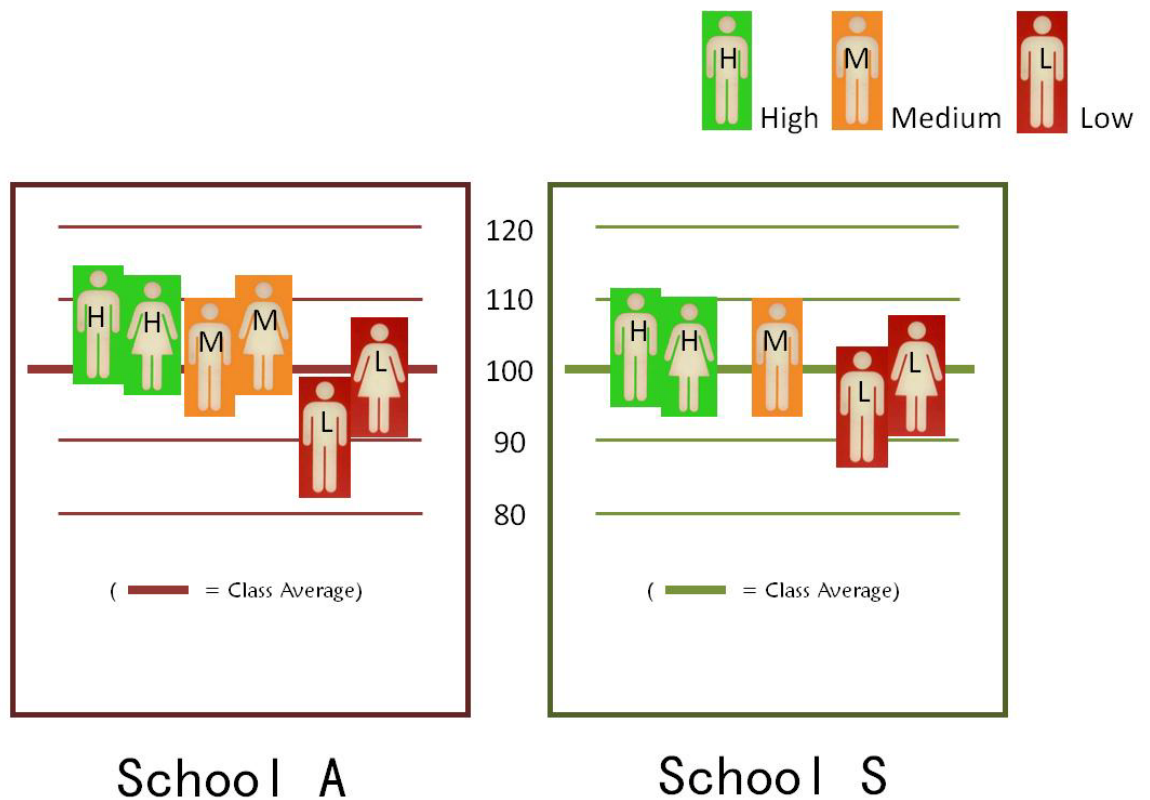


Figure 5-23 Belonging Index related to the teacher's perception of the child's behaviour (High, Medium & Low) - Year 5 & 6

In both schools belonging reduces for children whom the teacher perceives to behave poorly, a phenomenon which is most evident for boys. The belonging of girls in School A is slightly more resilient to the teacher's perceptions of behaviour and the balance of their belonging to the different aspects of the physical school remains reasonably consistent. School S girls on the other hand show a relative increase in their identification of the aesthetic/functional features of school in preference to those of social significance (Figure 5-24).

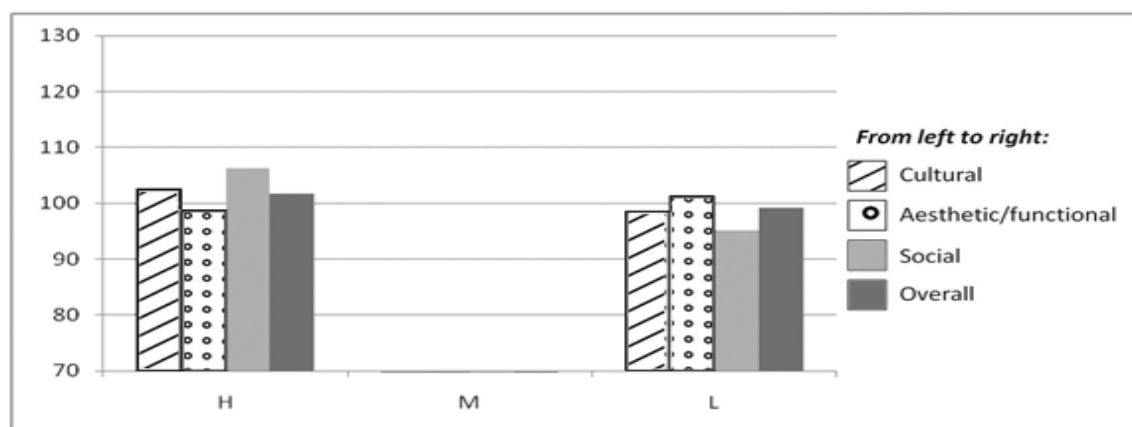


Figure 5-24 Belonging Index for School S Yr 5 girls shown for those perceived by the teachers as exhibiting high, medium and low behaviour broken down by cultural, aesthetic/functional and social physical aspects of school

5.5.4 Ability and ability group

Figure 5-25 demonstrates the relationship between the children's belonging and how they perceive their own ability. Apart from the boys at School A who consider their ability to be low and whose belonging is lower than average, the belonging of boys at both schools would appear to be largely unrelated to their academic self-concepts. The boys with low academic self-concept demonstrate a relatively higher belonging to features of the physical school with cultural significance.

High belonging of girls, however, is more fundamentally linked to perceiving themselves as academically average. The lowest sense of belonging in both classes is found for girls who perceive themselves to be of high ability.

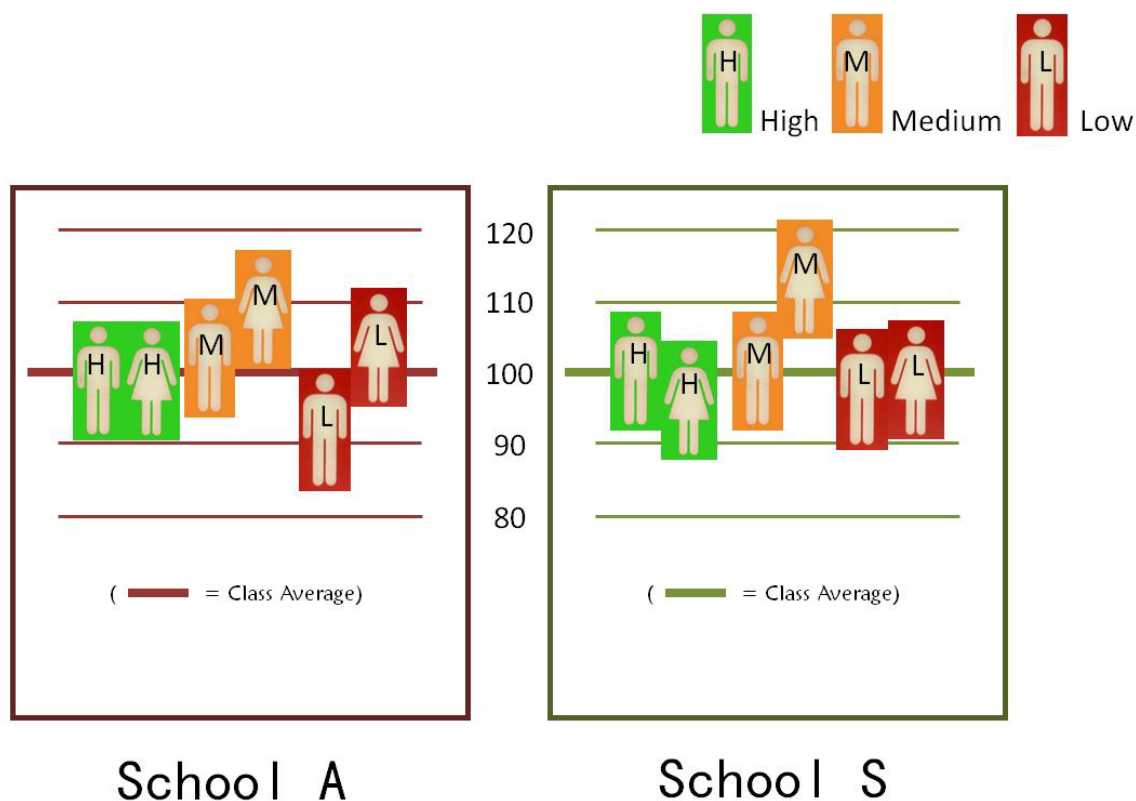


Figure 5-25 Belonging Index in relation to the child's perceptions of ability - Year 5 & 6

Figure 5-26 demonstrates that apart from boys whom the teacher perceives to be of low ability, children's belonging is reasonably independent of these academic perspectives of the teachers.

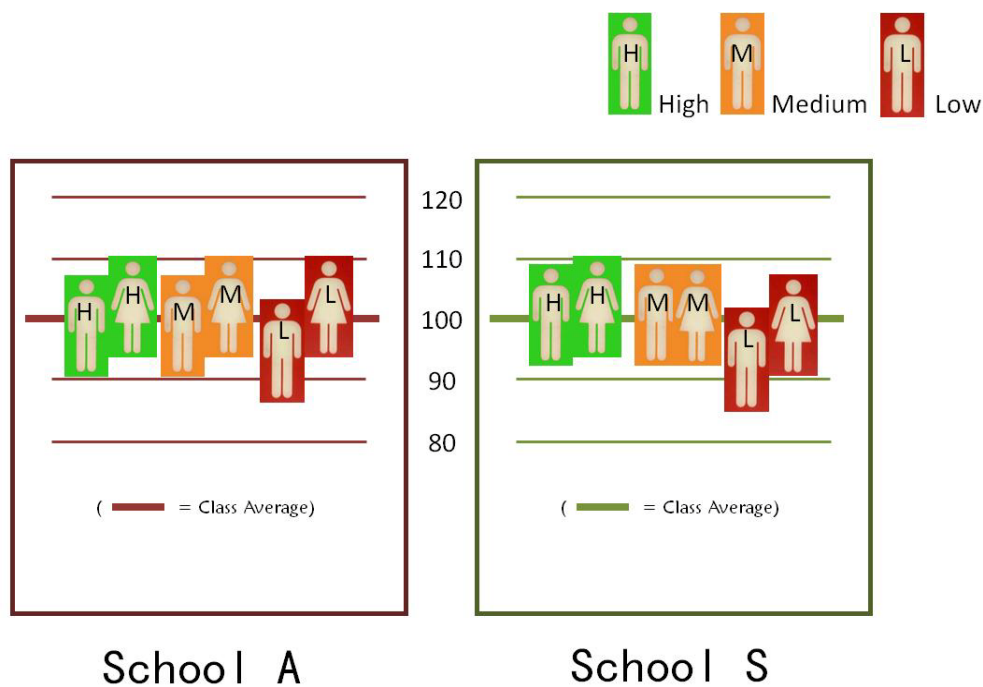


Figure 5-26 Belonging Index in relation to the teacher's perceptions of child's ability - Year 5 & 6

The results also suggest that the perceptions of the child and of the teacher are not aligned and that the teacher's perceptions of the children's behaviour are more dominant. This is a critical point in the quest for transformation and the desire to move from containment to attainment.

Ability groups differ from ability in the sense that they represent an enforced social grouping and a public judgment by the teacher. This represents a form of kudos and differentiation and Figure 5-27 reveals that the children's belonging largely follows Figure 5-26 apart from the effect of being placed in the lowest group. This formalisation of a teacher's perception can be seen therefore to be injurious to a child's well-being and belonging. It is particularly defined in School S which is socially more intense.

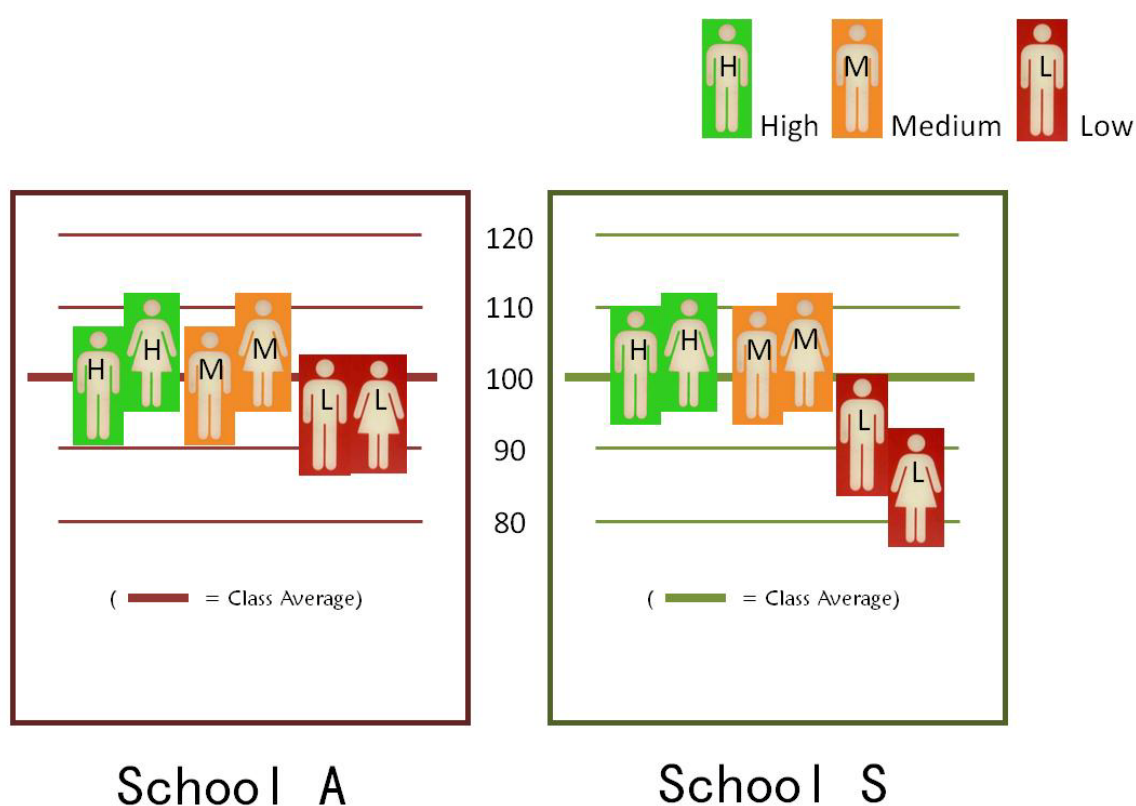


Figure 5-27 Belonging Index by Ability Group Year 5 & 6

5.5.5 Expressed happiness

High belonging is also generally associated with expressed happiness, as indicated in Figure 5-28. This is particularly evident for girls and most notably in School S. School A boys, however, are ambiguous in their responses. While Figure 5-28 relates to *Happiness Learning*, an evaluation of *Happiness around school* produces very similar results.

In addition to conclusions that belonging and well-being should be considered to be more than popularity, this indicates that expressed happiness is also only one dimension, explaining the polarised responses in the GDBD study in Chapter 3.

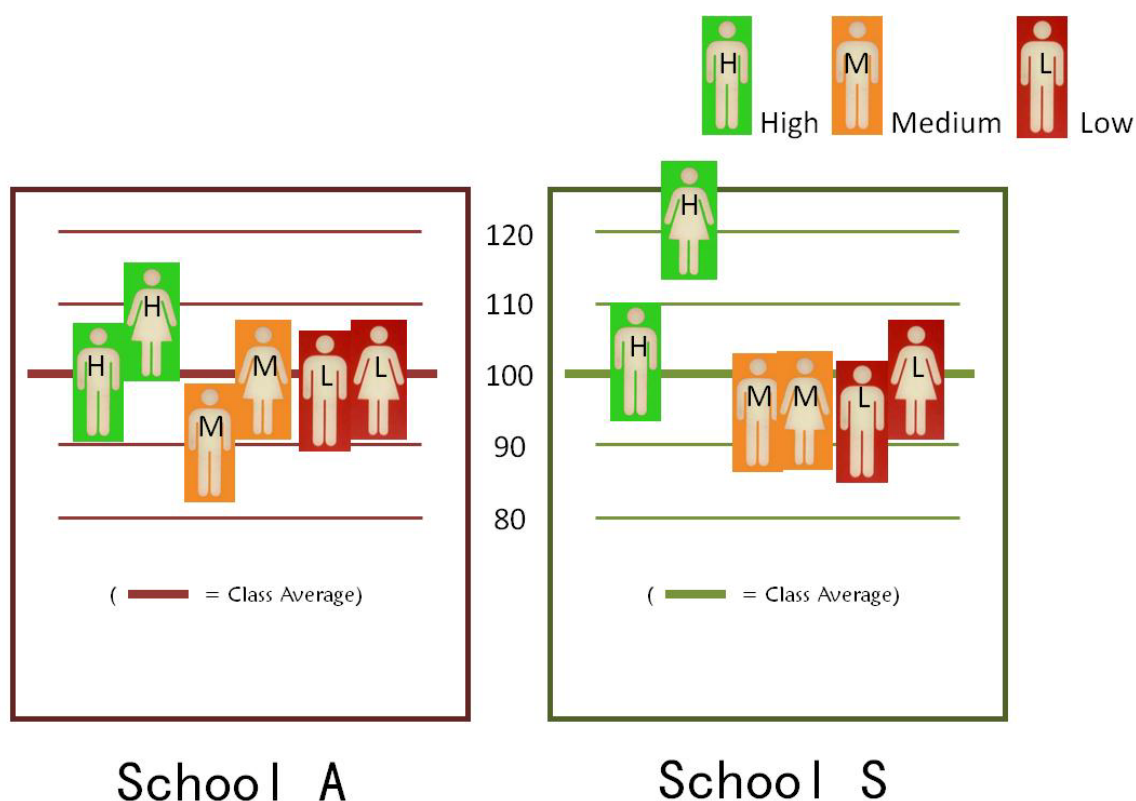


Figure 5-28 Belonging by Expressed Happiness Learning (High, Medium, Low) Year 5 & 6

5.5.6 Year 5 and 6: Review

The older children at both schools indicate a progression of the social school environment illustrated by Year 1 & 2 and the influence of the school culture on a child's sense of well-being is highly evident. The social circles are much wider and it is the outer circle which becomes more stretched providing evidence of an increased social exclusivity. While girls continue to be more discriminating it has been noted that the boys are more likely to reject another child of the same gender. The studies generally revealed an intensification of the social relationships in the class, an effect which in School S, as predicted based on Chapter 3 and 4, was more defined.

In Year 1 and 2 boys' belonging in relation to popularity was ambiguous and was potentially related to the attention that the most and least popular boys received. For the older boys there is a declining sense of belonging as popularity is lower; equally the findings point to higher belonging related to positive perceptions of behaviour.

Interestingly, boys' perceptions of ability are also associated with popularity but their belonging is more resilient unless these perceptions are socially formalised by placing children in ability groups. These social groupings notably affect the sense of belonging of all children. In relation to this, boys' belonging is more dependent on the teacher's perceptions of them compared with their perceptions of themselves.

Likewise, girls indicate commonality between the schools. Although positive academic and behavioural perceptions are similarly linked to a girls' popularity at School S, most significant in the girls' belonging is having a self-concept of being average, behaviourally and academically. This is replicated at School A and moreover in this case, girls' social positions also benefit from being average. Girls are equally affected by the social judgment of ability groups.

In both schools boys, as a group, show lower belonging than girls.

For boys at School A and girls at School S, positive identification switches relatively towards aesthetic and functional features of the school as their belonging declines. Boys' positive identification with social aspects of the school diminishes but its importance relative to overall belonging remains consistent.

In both Year 5/6 classes, the deviation from the average (mean) response to the identity cards is less than the younger classes, indicating that children think and perceive in a more similar way by the time they reach the end of primary school compared with when they start. Concurrently the range of responses is much wider for the older children indicating that certain children become more distant from what might be considered normal. This raises issues of both homogenisation and of inclusivity.

5.6 A subsequent discussion of chairs and prescription in design

Chapter 4 asserted that it is very difficult to evaluate design in isolation of the cultural and social dynamics of everyday school life. This chapter has treated the material school as inextricable from this context and evaluated children's sense of belonging on this basis. The findings so far are general in their nature but with relevant implications.

One key finding is that by the latter stages of primary school a boys' well-being, particularly, will be influenced by perceptions of their behaviour, notably the teacher's. This has been linked to both their popularity with peers and their overall sense of belonging. With this in mind, behaviour

and perhaps more importantly perceptions of behaviour, can be seen as the domain of design and its potential influence.

A school chair, as discussed in Chapter 2, is a ubiquitous feature of schools. Chapter 2 also identified that chairs are often blindly accepted within school and concerns for children's back problems are generally met by discussions of ergonomics. This is a general failing to challenge the chair itself and the teaching practice which requires children to sit in chairs for an unnatural amount of time (Barber, 1994). Here there is a broader discussion required about children's physicality and the importance of reflecting movement in the environments in which they learn.

This thesis identifies the design of a chair to be deliberately prescriptive: it is clear that use involves being in a seated position facing forwards and there is a boundary which determines whether movement is considered normal or abnormal. For example, sitting with the whole body facing to the side is incongruous with what the back of the chair communicates as *normal*. In addition, by defining a boundary, it denies the child any physical contact with other children in a way which can also be considered *normal*. Chapter 2 conjectured that the motivation for socialisation and organisation in schools defines to a degree the way they are designed and secondly the way design is used. In this respect normal and abnormal use translates into acceptable or unacceptable and informs behavioural expectations in the classroom.

Culturally school chairs have been further imbued with constraints, like the widely recognised misdemeanour of leaning on the back two legs of the chair described in Chapter 2. Although the design has generally enabled leaning or rocking to the point of creating what might be considered a particularly pleasing motion, this has been central to the behavioural restrictions associated with the furniture. In this way it is possible to see how the chair has provided a vehicle with which to establish and enforce authority.

The chair, as discussed, is a legacy of the tradition of school design which, whether consciously or unconsciously, drives behavioural expectations and issues of control. Considering the chair's unconscious impact on a teacher, it is easy to see how a child may be perceived to be behaving badly if they stray beyond the physical boundaries determined by the chair or succumb to the opportunity to lean and rock on the chair.

As Chapter 2 identified, the current primary school environments are limiting both physically and socially, both of which can lead to definitions of acceptable behaviour. Compounding this, the teacher's perception may, as described in this chapter, affect the belonging and social position of

the child. In both study schools the teachers' perceptions of children who behave poorly suggest that physical concerns of the environment mostly affects boys and their feelings of well-being: across the two older classes a consistent pattern was illustrated in which, of those children whom the teacher perceived to behave well, 73% were girls; of those children considered to behave the least well, 71% were boys. Mortimore, Sammons, Stoll, Lewis & Ecob (1994), following observations in primary school classroom note that, 'Overall, it appears that the main difference in teachers' classroom contact with girls and boys was in the greater number of negative comments, referring to their behaviour, made to boys (p.103).' In particular they conclude that a negative cycle may occur in which boys are reacting to the way they are treated by the teacher; relevantly, Epstein, Elwood, Hey & Maw (1998) identify boys' lesser achievement in school. However, based on observations of the Year 5 class at School B who were strongly oriented to physical activity and sport irrespective of gender, it would be simplistic to restrict the discussion entirely to boys.

Furthermore, as a consequence of the longstanding premise in schools that behaviour and achievement should not be in conflict (see Chapter 2), it emerges in this chapter that the two can be confused and perhaps even considered synonymous in the child's mind. Therefore it is possible that while the effect of the chair is essentially behavioural, it can also detrimentally affect the child's notions of ability, or academic self-concept. This, together with overall effects on negative association and belonging, can potentially lead to persisting disengagement with school.

Figure 5-29 describes a design intervention in School B carried out by the author to challenge the predominance of the chair and table in primary school classrooms.

***The Learning Island:** The purpose was to introduce a piece of furniture which did not define a learning position for the child to fit into but, instead, offered a multitude of options and allowed for close proximity and contact between children. The designed piece blurred the boundaries between furniture and architecture to provide a raised circular flat learning island sited in the middle of the classroom. The surface of the canopied wooden island was flat and raised approximately fifteen centimetres above the ground.*



The teachers perceived an improvement and connected this with the level at which the children were able to work. 'It has been lovely watching the children's attitudes change and many children work much better on the low level floor.'

Concurrent with this are the teachers' perceptions of behaviour. One teacher mentioned that 'It is used by all the children, both higher and lower abilities, and has proved particularly useful for children with 'poor' behaviour who seem to prefer working on a lower level.' In addition the children 'are keen to work on the island. No behavioural issues while children are using it. They love working on it.'

Figure 5-29 The Learning Island - influence of design on teachers' perceptions of children. 2006.
Designer: R Cullis. Photograph. Source: Author

The teachers' remarks in Figure 5-29 are arguably an indication of how the design heritage of schools can determine how children are perceived. This Chapter indicates how important those perceptions can be to a child and how arbitrarily or subconsciously they are formed. There was a clear sense that the teachers felt some degree of liberation from a constraint imposed upon them with which they were assessing the dynamic in their classroom.

In this way there is scope to intervene in the negative cycle proposed by Mortimore et al. (1994); the potential role of design to influence the school culture and perceptions of acceptable and unacceptable behaviour is feasible and linked to young children's academic self-concepts. In a further example, Alex's reference in Chapter 4 to the number bricks making him misbehave indicates how associations between physical things, and behaviour and learning can lead to negative self-concepts in certain areas like numeracy. It is apparent that Alex finds it irresistible to use the number bricks in a way that is not acceptable. While this is not necessarily an issue of design, it does however demonstrate that objects can become embodiments of children's positive and negative school experiences and self-beliefs.

Fundamentally, evidence presented here indicates this to be an issue of prescription of the environment, which may or may not be conscious by the school, and of understanding how children internalise this ultimately into feelings of ability and worth. This extends into the communicative environment and evidence in School B especially points towards very arbitrary demarcation of the classroom with signage. Merely allocating areas is symptomatic of a school's endeavours to organise as opposed to develop creativity or reading, for example. Instead this prescriptive practice, as the belonging studies suggest can once again lead to children believing that they are not creative if they do not identify with these areas.

Furthermore, this type of prescription can be regarded as the reality of classroom layouts purported to support children's different learning styles, such as those proposed by Dunn & Dunn (1993), in which the classroom becomes a tool for organisation as opposed to learning. Considering kinaesthetic aspects of learning styles for example, there is certainly an overlap with physicality, for example. However, the discussion put forward in this section relates to providing for needs which predicate learning rather than embroiling designs in 'reductive' notions of learning styles, as Miliband (2007, p.3) describes.

There must, however, be a balance. Prescription can also be seen as a cultural reaction to physically and socially freer designs. In open plan it appears that the teachers prescribed traditional norms of behaviour by redefining a space which they consciously or unconsciously

knew to have certain behavioural outcomes. What would a child be expected to do in an open space other than to discover it, running and hiding and in some cases testing the limits of an adult's authority? This thesis suggests that open plan offered children an opportunity of natural behaviours which the organisation and culture of the school could not honour; similar to having a long corridor and then expecting children to not want to run.

Finally, the scale of the challenge of changing culture by creating schools which look different was illuminated by the school cleaners' refusal to clean the learning islands in both schools. This highlights the fixed yet highly influential views which extend beyond the teaching staff to cleaners and parents for example.

5.7 Reflections on the methodology

Reservations were raised earlier in this chapter about the risk of providing a snapshot of the classes' social networks which might be unrepresentative and therefore unreliable as one particular context with which to evaluate children's identity card responses. However, the consistency of the social circles by age group removes some of the concerns and overall this thesis suggests that while children's responses will naturally vary day by day, the general picture presented is useful.

The *identity card* study introduced different children to the same photographs and it was noticeable that for certain photographs children interpreted them quite differently. The image of the reception mirror, shown in Figure 5-30 at School S is a good example of a clear gender difference in appraisal. Typically boys commented on the mirror itself or surveillance issues, whereas girls were generally more interested in the reception desk reflected in the mirror. In one respect this is what the research was about: identifying how individuals and groups perceived aspects of the material school. On the other hand, in this study which sought to measure responses, it is important that a more complex image could render analysis of the results inconclusive. In addition to this Billie's first comment was that he thought the photograph was cool which indicates that judgments could be made purely on the photographs' perceived aesthetic value. The crucifix image was complex and largely inconclusive for other reasons as will be explained in Chapter 6.



Figure 5-30 School S reception mirror

Categorisation of the *identity card* images into objects, architecture or decor, for example, proved to be fairly arbitrary and inconclusive. It was difficult to categorise an image as architecture without recognising that the image shown may also contain objects or furniture for instance. The reception mirror shown in Figure 5-30 is a further illustration of how one child may perceive an object while another perceives furniture or architecture. Generally, this indicates that treating elements of school design separately does not reflect the reality of their use.

Previous chapters have been critical of research which seeks to make absolute links between aspects of a child's well-being. These have typically become statistical exercises which fail to appreciate the complex, broader nature of well-being. In this chapter, the results have been deliberately presented to minimise the use of numbers and to indicate patterns of response which infer central relationships. The purpose of this thesis is to provide a focus for a philosophical debate about children and the design of their material world. While the findings suggest key areas in which others might choose to carry out statistical work, the necessary increase in sample size and choice of appropriate methods risk losing the insight which a more in-depth study affords.

5.8 Summary

Rather than a discussion of materials or structural quality children have indicated that they will predominantly judge a physical feature of school by the social and cultural experiences or meaning they associate with it.

This chapter initiated an investigation of belonging by investigating children's positive identification with their physical school. The studies presented are based on the contention that positive identification of elements of the school presents an access point for research into the investigation of a child's well-being. Positive identification, which, as a cumulative measure, is referred to as the child's sense of belonging, is positioned as a pivotal point from which positive longer term outcomes like self-esteem and economic well-being, for example, may emerge.

The studies revealed that, based on two quite different primary schools, there is much commonality in what determines the nature of a child's existence at school and their well-being. This shared educational culture occurs despite differences illustrated in Chapters 3 and 4 which revealed the greater social orientation of School S and the academic orientation of School A. Fundamentally the common factor which underlines the shared educational culture and which is emergent in this thesis is the importance of the child-teacher relationship and the pervading impact on the way children feel and operate at school.

Additionally this chapter suggests that the formal, informal and natural grouping in schools, which is endemically used to support school organisation, forms the basis of children's well-being as Tajfel & Turner's (1979) Social Identity Theory would predict; children's senses of belonging can be seen to be persuasively derived by age, gender, and ability group for example. It is also evident that the design of the school reflects this general organisation and this thesis indicates that the layout of classrooms to support ability groups is particularly injurious to certain children's well-being. Thus, assisting positive identification with school and hence the formation of identity which is aligned to what the school is trying to achieve, is an essential concern of design and appears to be focused on social grouping.

Across both schools the older boys showed a lower sense of belonging than girls and, based on the perceptions of the teachers, there is evidence that definitions of negative behaviour relate to boys more than they do to girls. The physically restraining environments in which these boys learn and, as the results suggests, boys' heightened dependence on what the teacher thinks can only compound potential disaffection with school. This is not necessarily however about children

getting away from the teacher; this relationship is found to be centrally important to children in each of the schools.

Comparatively the belonging studies illustrate that girls, who are also dependent on the teachers' perceptions of them, show greater belonging if they perceive themselves as average which appears to be linked to social needs. Furthermore the intensity of girls' relationships is more pronounced than boys, which Chapter 4 strongly implied manifests itself in territorial playground behaviour. This is discussed further in Chapter 6 by considering responses to particular images in the *Identity Card* study.

Overall children have, as predicted, been largely initiated into a culture based on behavioural and academic concerns. The *identity card* study illustrates a much greater variety of individual responses from the younger groups compared with more homogenised responses from the older children; the older children's responses show general accordance with the behavioural and academic expectations of the school. This, described further in Chapter 6, is a central concern for the pursuit of personalised learning in which individualism and creativity are goals. Accordingly, it is difficult to envisage a sudden cultural move from containment to attainment, as it is now coveted, and it would appear that on balance behavioural concerns of mainstream schools are preventing progress in relation to learning and achievement. This, an emergent theme in this research, is compounded by the necessary balance between what is considered achievement and what is considered acceptable behaviour.

The learning island illustrated how design might influence this by indicating that some aspects of organisation and control are not necessarily conscious decisions on behalf of the teacher. Some design interventions can break into this determinism by the physical environment to have a liberating affect on the child and the teacher. Therefore, while the research presented here is reasonably diverse it does appear to reveal some simple principles on which to tackle school design centred on the recognition of the social and physical nature of schools and children. Challenging the traditional elements of school design which, this thesis suggests, have become burdened with a behavioural legacy is central to cultural change.

Determinism, it has been contested, is fundamentally about prescription in design. It is evident that, by thinking about the design and use, of schools, the level of prescription would appear to be highly relevant. This reflects the position of Chapter 2 which suggested that there is no reason to believe the focus of school organisation on acceptable behaviour has diminished since Plowden (1967) or even the Board schools. Finding a balance therefore between freer, non-prescriptive

design and controlling environments is suggested, particularly when remembering that open plan at the extreme of non-prescriptive design failed. In addition Medd (1998) highlighted that this was not just about control versus freedom but was also about design having character and interest for both the children and the teachers.

If a non-prescriptive environment is indeed a contributor to a child's well-being, enhancing the social, physical and hence sensory nature of the environment, it is a concern of both the design and its use in which the school culture and organisation must be prepared for, and able to fulfil, the behavioural response. Based on the assertion that the key is the child-teacher relationship, it is suggested in this thesis that investigating ways to enrich this relationship beyond behavioural constraints must be a joint priority for Design and Education.

Finally, the chapter has also indicated subtle shifts in the composition of children's belonging from social aspects of the physical school, for example, to aesthetic/functional aspects. If belonging is indicative of inclusion then understanding this is essential. In addition, at this stage the thesis has not considered how children have responded to individual images, and so it would be premature to assume that prescriptive environments are not right for all children. For example, what do children with a high sense of belonging identify with compared with children exhibiting low belonging? Chapter 6 will go on to discuss the specific detail of the individual images and the character of children's belonging in relation to belonging and inclusion.

Chapter 6: School features and perspectives on inclusion

6.1 Introduction

Chapter 5 interpreted the results of the school belonging studies at an overall level to conclude that one of design's central contributions lies in its effect on the child-teacher relationship and, in particular, teachers' perceptions of a child's behaviour. Within this discussion the subliminal messages which tell children and teachers what is acceptable and what is not are a vital, yet little understood, consideration of the design. As a consequence the chapter highlighted the effect of the legacy of schools designed 'for other purposes at other times (Hargreaves, 1994, p.x),' and indicated that prescription, in particular, can be the enemy of a child's school well-being. Similarly, a cultural layer which is equally prescriptive is apparent in how the physical school, architecture through to wall displays, combines. This appears to be the point at which the behavioural focus of organisation in schools is self-perpetuating and mutually supported by the legacy of Victorian design.

The findings of Chapter 5 contribute to a general approach to design by indicating the areas which are prioritising containment over attainment and confusing children about the distinction between ability and behaviour. The chapter did not, however, investigate the specific detail afforded by the study. This detail offers a further insight into children's relationships with their physical school and their well-being by considering responses to individual aspects of the school reviewed against children's school and social context.

Despite an apparent difference in the level at which boys and girls consciously relate to material elements of school, the analysis in Chapter 4 did not overly emphasise gender as a factor in children's relationships with their physical school. Chapter 5, on the other hand, clearly highlighted that there is a gender divide both in terms of the children's social circles and the belonging shown to the physical school by girls and boys. In fact responses are more clearly divided by gender than they are by age and as such this Chapter will approach the evaluation of images with a considered appreciation of gender differences and commonalities.

Children's responses become more uniform as they get older which suggests the *successful* socialisation role of schools. Here major implications emerge for the pursuit of individuality yet such convergence has also been identified as a completely natural phenomenon of group dynamics (Tuckman, 1965; Tajfel & Turner, 1979). In addition, despite demographic differences, the standardisation of children's responses proved to be common across both schools and

happened upon the same aspects of a child's experience at school. This chapter will particularly investigate the nature of these common issues for the older groups.

Positive identification and belonging, it was proposed in Chapter 4, indicates the assimilation of schools' cultural aims in a child's personal identity and, alongside, feelings of inclusion in the school society. In fact, according to the well-being model, belonging, inclusion and identity are absolutely linked and point towards the achievement of positive longer term outcomes. The detail of the individual images is expected, therefore, to reveal aspects of the physical school relevant to belonging and hence more affective outcomes. This chapter explores belonging as a signifier of inclusion and identity, both of which are central issues in today's school programmes.

In practice the term *inclusive design* has tended to be narrowly applied to provision for people with physical disabilities (Imrie & Hall, 2001) yet the discussion about inclusive schools entertains a broader, psychological objective as well as including concerns of race and religion, for example (CSIE, 2008). The Centre for Studies on Inclusive Education (CSIE, 2008, para. 2) describes, 'increasing the participation of students in, and reducing their exclusion from, the cultures, curricula and communities of local schools not only (for) those with impairments or those who are categorised as 'having special educational need'.'

This Chapter will consider children's responses to the images presented in the identity cards study to draw conclusions about different perspectives on inclusion and how the material school contributes. The images shown in the figures are identical to those which were shown to the children.

6.2 Evaluation of children's responses

The belonging research evaluated children's responses to a range of different aspects of their physical school environment, some of which were reasonably predictable like playground benches whereas others were less so, like the School A chimney, or the onions growing at School S. Children's responses were equally unpredictable because they revealed the child's interaction with the physical school rather than adults' assumptions about this interaction.

This section presents the example of the gate release button at School A to describe the general approach to evaluation presented in this chapter. The results of children's positive identification with the gate release in relation to their overall belonging, popularity and self-concepts are discussed in the context of inclusion.

6.2.1 Symbols used

Before presenting this example, the symbols used throughout this chapter require explanation.

The method for capturing children's responses to images of their physical school entailed the use of smiley faces related to a 1 to 5 Likert scale (See Chapter 5). This chapter uses averages of the children's responses calculated for different formal or informal groupings, based on gender, learning group, social position, or belonging. For example, for social position children are divided, as per Chapter 5, into central, middle and outer children. For belonging, on the other hand, they are grouped into high, medium and low belonging groups which are allocated based on belonging relative to the rest of the class.

Although for the actual research activity with the children it was deemed too complicated to present more than five faces, the averaging of results enables a more differentiated scale to be used. This scale with its associated symbols is shown in Figure 6-1 and uses '+' and '-' symbols as the eyes of the faces to indicate more or less favourable results within the range of the same face,

i.e.  and  instead of .

| | | | | | | | | | |
|--|-------|-------|-------|-------|------|-------|-------|-------|---|
| 1 | >1 | >=1.5 | >=2 | >=2.5 | >=3 | >=3.5 | >=4 | >=4.5 | 5 |
| | < 1.5 | < 2 | < 2.5 | < 3 | <3.5 | < 4 | < 4.5 | < 5 | |
|  | | | | | | | | | |

Figure 6-1 Symbols reflecting children's responses against a Likert scale of 1 to 5

In keeping with the basic practice of the thesis, symbols and their inferences are used in preference to numerical values.

6.2.2 Exploring the gate release



Figure 6-2 The gate release button - School A

School A has a front gate opening onto the main street which runs through the village. The barred metal gate is high in relation to a child and, within the memory of the older children, replaced an old wooden gate which was much smaller. On the outside of the panelled wooden hut just inside the gate, is a release button at a height which would allow an adult to press it but not a child of average height. This is shown in Figure 6-2.

For the School A boys the gate release is the second most popular image in Year 1 and 2 and the third most popular in Class 3, Year 5 & 6. While the button is placed for security reasons and superficially its popularity with boys may be seen as a reference to safety, the study reveals that it symbolises a variety of things for different children. In fact, as much as the *star of the day* implies conformance, the gate release button appears to demonstrate the importance of playfulness and rebellion for boys.

Conversations with the children discussed the motivations to replace the old gate with something more secure, keeping 'the unwanted out' and making it 'safe for the little ones.' Alternatively children talked excitedly about going home. However, more negatively, a number of the older

children, boys and girls, mentioned feelings of being trapped and not being trusted. Very clearly and possibly related to these feelings of entrapment, some boys found the challenge of jumping up to press the button and not being caught to be very exciting.

Consequently, across both classes it is most popular with the boys. Girls and boys in the Turtles show similar profiles in which positive identification is linked to low teacher perceptions of ability and behaviour. Where boys and girls differ is in the relationship between their feelings towards the button and their overall belonging to school. Boys identify increasingly with the gate release as their overall belonging to school declines, as Table 6-1 indicates. Simply for many of the boys it is indicative of fun and while it can be argued that the opportunity to be naughty and push boundaries is important, it is apparent that there is a reaction to the authority of the school and its culture. This is illustrated in Table 6-1 in which the average responses of children with high, medium and low belonging for *all images* is compared with their expressed identification with the gate release.

The gate release is evidence of the gender difference in responses to aspects of the physical school, suggested by the discussion in Chapter 5. It can be surmised from these results and the unstructured interviews that girls' positive relationships with the gate release are primarily linked with feelings of safety. However, for girls expressing low belonging it would seem that provision for safety is less significant and negative feelings relating to freedom prevail.













| | Boys | | Girls | |
|------------------|---|--|---|---|
| | All images | Gate release | All images | Gate release |
| High belonging |  |  |  |  |
| Medium belonging |  |  |  |  |
| Low belonging |  |  |  |  |

Table 6-1 Identification with the gate release button by High, Medium and Low belonging - Year 1 & 2 - School A

In year 5 and 6 the gate release is emphatically popular with the boys who also demonstrate the lowest belonging to school and generally it is most popular with those children whom the teacher perceives to behave poorly or to be of lower ability.

6.3 Children's relationships with symbols of achievement

Chapter 3 discussed the way in which physical aspects of the school are used to convey messages about the school culture and its values. The gate release button overtly communicates values of security and safety and probably authority. Both schools have various symbols which relate to the value placed on achievement and are either based on individual or communal attainment.

Some of these symbols came to the fore in the *GDBD* (Chapter 3) study including, for example, the class turtle and the housepoint cup. This section investigates children's relationships with these further.

6.3.1 The housepoint cup at School A



Figure 6-3 The housepoint cup - School A

In Chapter 3 the *GDBD* study revealed the perceived importance of the housepoint cup, portrayed in Figure 6-3, to the children in Class 3 who consistently referred to the award or loss of

housepoints; the cup is highly visible in the classroom as a symbol of achievement. Chapter 5 went on to highlight the dependence children generally demonstrate on the teacher's perceptions of them and the housepoint cup is a prime example of how the material school is used to reinforce this aspect of the culture. Its aesthetic is one of sporting achievement which deliberately appropriates popular symbols for the pursuit of school objectives. The examples of the teddy bear and the turtle are broadly equivalent to the cup for the younger classes.

The cup is widely popular with the children and its focus on collective competition, through the grouping of children into *houses*, appears to make a difference for many. Success is team-based which is evident in the children's positive comments: 'Yellows!' or 'Greens haven't won yet.'













| | Boys | | Girls | |
|--------|---|---|---|---|
| | All images | Housepoint Cup | All images | Housepoint Cup |
| Centre |  |  |  |  |
| Middle |  |  |  |  |
| Outer |  |  |  |  |

Table 6-2 Identification with the Housepoint Cup across the social circle - Year 5 & 6 Boys and Girls - School A

It is feasible that the collective rather than the individual basis on which it is won contributes to the positive identification shown by the children who are on the outer social circle, shown in Table 6-2. However, it is consistently popular for children whatever their sense of belonging; a positive indicator for inclusion in relation to this specific culture.

Assessing positive identification against perceptions of behaviour and ability is also revealing. For boys it is clear that those whom the teacher perceives to behave the worst are less favourable as are boys whose ability is perceived by the teacher to be high. This indicates that, in reality, it is

probably a mechanism for inclusion of children who are less able and, simultaneously, a way of managing children's behaviour. By appropriating popular symbols one could suggest that it is a subtle method of conditioning and enforcing rules. Section 6.5 contrasts this with other methods of enforcing rules like the use of communication in the form of the School S Code and the School A Charter.

With respect to ability, the inclusive effect is emphatically clear for girls who are in the lowest learning group or whom the teacher perceives to be of lower ability. The accommodation of children with low academic self-concepts appears to offer the chance for them to achieve, to win and to contribute which is probably less common for some of these children on an individual basis.


The housepoint cup naturally raises questions about the way in which the culture approaches achievement and how the individualisation of school may ultimately prove exclusive. The symbolising of objects in this way can be seen positively in terms of inclusion, both for children who are less popular with their peers and children who generally feel low belonging to school. The cup can logically be seen as a mechanism to balance exclusion in a strong achievement culture.

6.3.2 The trophy at School S



Figure 6-4 Trophy at School S

In common with other symbols of achievement, the trophy at School S (Figure 6-4) is also widely popular and the range of responses around the average was the lowest of all the images. Overall

boys are most favourable  compared with girls . Positive identification, however, is particularly apparent from low belonging girls indicating a similar pattern to the housepoint cup at School A and is likely to signify the desire to share in success. Combining success with a sporting aesthetic, it is noticeably popular with boys in the lowest learning group and the socially central boys are very favourable. Children typically associate it with winning ('we won!') and collective pride ('I'm glad for the school').

The Pandas' responses support the conclusions made for the older class. Positive identification is shown by boys who express the highest happiness and those whom the teacher attributes the greatest ability. For girls the opposite is the case. This indicates the appealing qualities of winning for boys and sharing in success for girls.

6.3.3 The Victorian project display at School A





Figure 6-5 The Victorian project display in Class 3 - School A

Chapter 2 described the common practice of displaying children's work in either the classroom or in hallways and this can be viewed as another symbol of achievement; Killeen, Evans, & Danko (2003) indicate that children feel positively about having their work on view. In support, Danielle, for example, feels that 'if your work is up it represents you,' suggesting the decorative

environment can be used to reflect the children’s identities. However, underlying these reflected identities are more fundamental messages about what the school considers to be good, as Chapter 3 proposed, providing the *character* of shared identity.

The *Victorian* display in Class 3 at School A shown in Figure 6-5 is an example of such a display which, in this case, illustrates a history topic the class was working on. It is notably more popular

with girls  than boys . For both, however, positive identification is strongly related to high overall belonging to school (Table 6-3) and therefore many children do perceive the display as a communication of the values of the school.

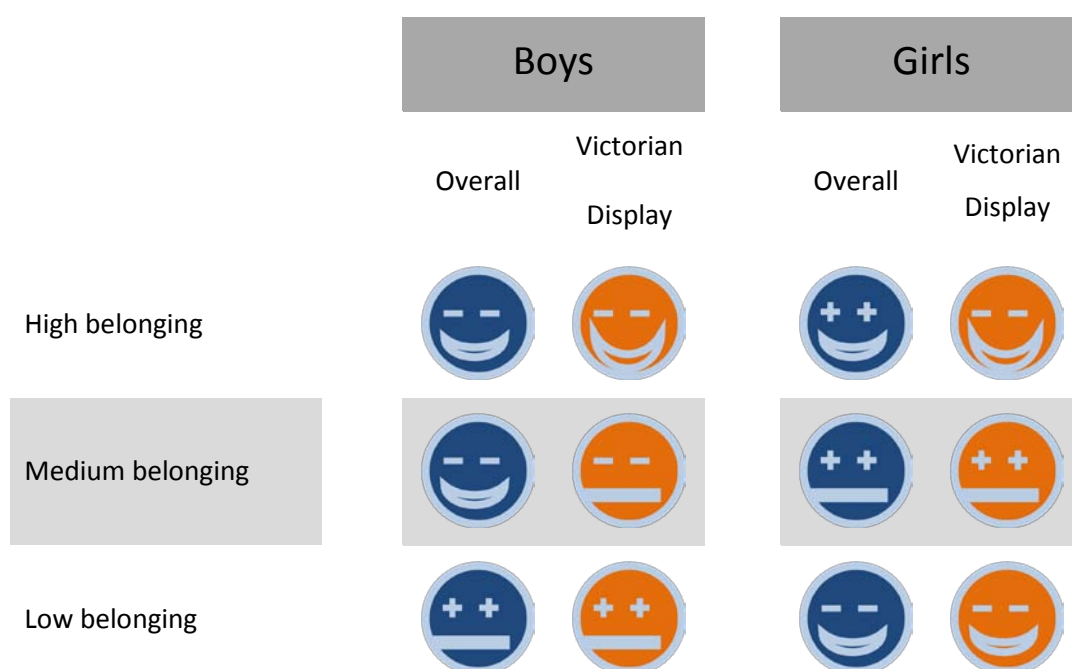


Table 6-3 The Victorian display - Belonging by Gender - Year 5 & 6 - School A

Compared with the more literal symbols of achievement which involve the act of winning, the display appears to have the opposite effect by particularly appealing most to boys in the outer social circle and with the girls in the social centre. As seen in Chapter 5, these tend to be girls with medium self-concepts. On the other hand boys who perceive their behaviour to be good or the teacher perceives their behaviour to be good, identify the most, indicating the lack of clarity between achievement and behaviour, suggested previously.

It is useful to compare this evaluation against the children’s comments which reflect more logical and practical thoughts; some suggest that the display is out of date, some reflect on their interest, or lack of interest, in the subject and others explain how much they like putting things up. Sophie

says 'I like the way it's presented. More should go up,' whereas Freddie says 'we don't use it.' This is further evidence of the gap between findings of research which demands conscious, logical explanations and the comparative, non-verbal methods used in the belonging exercises.

6.3.4 Ability group signs

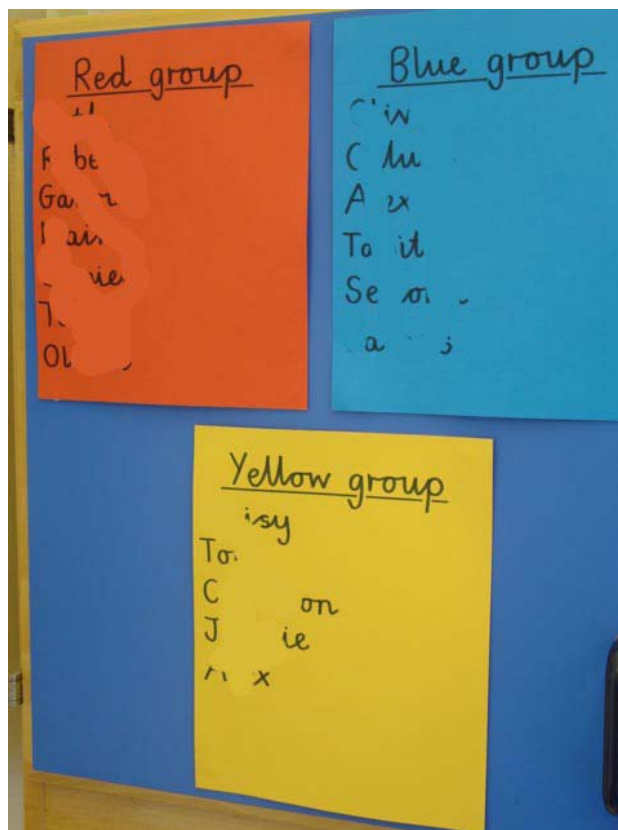


Figure 6-6 Ability group sign - Year 1 & 2 - School A

In Chapter 5 it was shown that there is a link between older children's belonging, their social position, and the ability group in which they are placed. It was concluded that this public decision, made by the teacher, is a socially important one for the children. Formal grouping enforces identity and it provides children with a ready-made categorisation with which to exercise inclusion and exclusion, behaviour which has been described by Tajfel & Turner (1979).

Although this relationship was not well formed in either of the younger classes studied, becoming more apparent in the older classes, an image of the ability group sign illustrated in Figure 6-6 was shown to the Turtles, to gauge their feelings towards it.






| All children | |
|------------------------|---|
| Ability/learning group | Ability group sign |
| High |  |
| Medium |  |
| Low |  |

Table 6-4 Identification with the ability group sign by High, Medium and Low ability group - Year 1 & 2 - School A

Positive identification is certainly determined by which group the child is in, with the sign being most favoured by those in the highest group, as shown in Table 6-4. As a mixed age class, apart from one individual, the high and the low learning group is made up of Year 2 and Year 1 children respectively and it has been shown that positive identification is much greater for Year 2 children compared with Year 1. This is particularly the case for girls who positively identify with the sign:

Year 2  compared with Year 1  girls.

It is not obvious whether, in mixed age classes, the formalisation of groups is detrimental to the younger children but from these responses it is worth investigation. Aside from ability, overall the sign is most popular with children who perceive themselves, or are perceived by the teacher, to behave well; it would appear therefore that age and behaviour are relevant factors in ability grouping.

For boys, the sign is most popular in the outer social circle, whereas, for girls the opposite is the case. However, for both sexes it is linked to high overall belonging to school, shown in Table 6-5, and positive identification drops considerably for girls with low overall belonging.

| | Boys | | Girls | |
|------------------|------------|---------------------|------------|---------------------|
| | All images | Learning group sign | All images | Learning group sign |
| High belonging | | | | |
| Medium belonging | | | | |
| Low belonging | | | | |

Table 6-5 Identification with the learning group sign by High, Medium and Low belonging - Year 1 & 2 - School A

References made by the children suggest some irritation at being grouped and to the fact that it symbolises work; Alex mentions that ‘It makes me cross,’ and Alexia rues that ‘we have to do work.’ Others reveal that they find the sign helpful for remembering which group they are in.



Figure 6-7 ‘To read using expression and looking at the punctuation’ - Learning group sign at School S

The learning group sign at School S, shown in Figure 6-7, is not an entirely equivalent comparison with the School A sign. The image depicts a sign which hangs above one of the classroom tables indicating where the highest learning group (purple) work. In this case the communication also acts as a territorial indicator which indicates that it is doubly impactful.

The image is most popular with the highest group potentially revealing the children's identification with the purple learning group rather than learning groups as a whole. Several references are made to the sign representing the highest group: Michael says 'I'm in it: the highest group,' and Megan says 'I'd like to be in the purple group.' There are however some more negative references. Christopher, speaking in the third person, remarks that 'He's to go into the red if he tries to sit in the blue' and Jamil plainly says 'boring.' Tanya positively mentions that her cousin Dylan is in the purple group, revealing the influence of association.

6.3.5 Review

Different elements of the physical school which reflect or attempt to stimulate ability and achievement have subtly different effects on children. Objects like the School S trophy and the housepoint cup appeal noticeably to girls with low belonging who are often the less popular girls. They seem to respond well to the opportunity presented for collective achievement whilst, comparatively, the most favourable boys are more likely to be popular and with higher belonging. The winning and sporting aesthetic appears significant in this case.

Previous chapters have contested that objects used in this way can be seen as conditioning tools and while this assertion is upheld, there is an apparent inclusivity for a number of children at risk of degrees of exclusion. For others, like boys with lower belonging, other traditional features are important; these boys identify more with subtle reflections of collective achievement like displays. Crucially achievement is clearly defined for children and objects and communication are used to reinforce these definitions.

Chapter 5 maintained that the physical form of schools mirrors the school organisation in terms of formal groupings and, since Plowden (1967), this is evidently geared towards ability groups in primary schools. The furniture in all the classrooms studied was organised based upon ability or learning groups and such public demarcation for the child is highly influential on their well-being; the detail in this section indicates that such organisation can also confuse notions of ability with age and perceptions of behaviour.

6.4 Children's relationships with learning tools

In school inclusion may be considered to specifically relate to the feelings of those children who are less academically able, either in their mind or in the mind of the teacher. There is evidence in Chapter 5 that belonging is lower for children with low opinions of their ability. The belonging studies introduced images of various learning aids or supports which allow this relationship to be investigated.

6.4.1 The computer keyboard

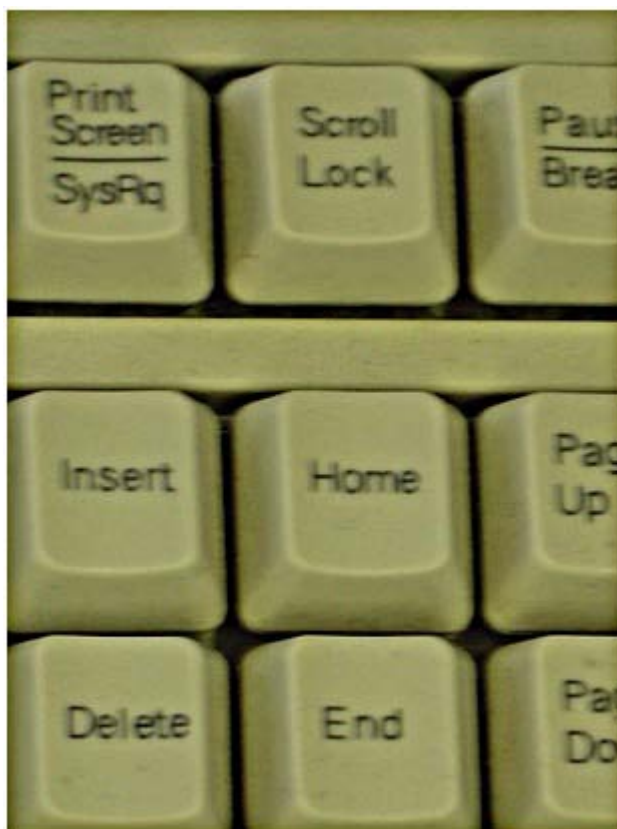


Figure 6-8 Computer keyboard in the Turtles classroom at School A

The keyboard in the Turtles classroom unearths issues relating to inclusion, technology and the rationing of technology in primary schools.

The responses of the Turtles reveal that overall it is most popular with girls and the older boys. For girls it is most positively identified with when their ability is perceived to be low by both themselves and the teacher. Similarly boys who consider themselves to be of lower ability also demonstrate a preference. Table 6-6 illustrates these points.







| Perception of ability | Boys | Girls |
|-----------------------|---|---|
| High |  |  |
| Medium |  |  |
| Low |  |  |

Table 6-6 Identification with the computer keyboard by High, Medium and Low child's perceived ability - Year 1 & 2 – School A

Here there is a distinct parallel with the library (Section 6.6.3) in respect to how children who perhaps feel academically less included view alternatives to traditional class-based activity which have less of a social or group element. It appears that these children are responding positively to places or objects which allow them a degree of social refuge. The results also imply that the keyboard appeals to both the children who are happy learning and those who are not, suggesting that the use of computers may not be considered by the children to be learning in the same way that reading and writing perhaps is.

From the point of view of belonging, the responses indicate that the keyboard is seen as something positive by two distinct groups of children. This relationship, shown in Table 6-7, indicates that the keyboard can equally represent the learning ethos of the school as much as it does an escape from it.

Observational evidence from the class also illustrates that the keyboard is seen as a scarce resource by the children and it is necessarily rationed by the teacher. The teacher needs to manage its use and this tends to be in a way which supports socialisation goals described in Chapter 2. If this is done on the basis of behaviour, it is evidently much more favourable for the

children she considers to behave well  as opposed to poorly .













| | Boys | | Girls | |
|------------------|---|--|---|---|
| | All images | Keyboard | All images | Keyboard |
| High belonging |  |  |  |  |
| Medium belonging |  |  |  |  |
| Low belonging |  |  |  |  |

Table 6-7 Identification with the keyboard by High, Medium and Low belonging boys and girls - Year 1 & 2 - School A

6.4.2 Projector

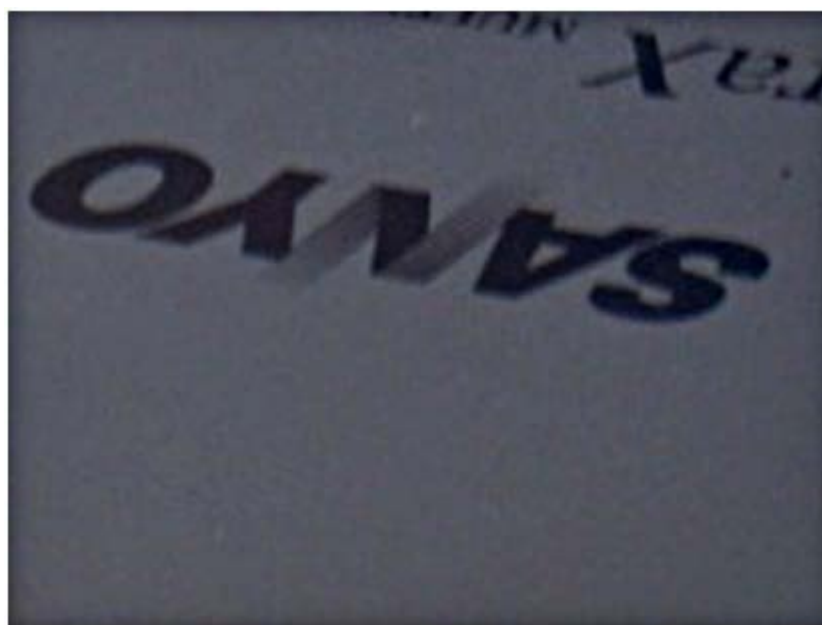


Figure 6-9 The whiteboard projector at School A

The image of the projector presented in Figure 6-9 was shown to children in Class 3 and provoked comments relating to the use of technology as an aid to learning; simply, 'It helps us learn.' Children also refer to being actively involved in learning which traditional pedagogy arguably does not encourage: we 'get to interact and not just look'.

However, overall for girls it is linked to low self-concept relating to ability and behaviour. For boys it is the opposite and positive identification is linked with high perceptions of ability, both from the child and the teacher, and high expressed happiness learning and high ability group. In Chapter 5 it was illustrated that these boys are typically more socially central.

It is possible therefore that older boys relate technology positively with their learning experiences whereas girls, who are considered to be less able, see it as a diversion.

6.4.3 The number line at School S

An example of a communicative learning tool, and far more traditional than the previous illustrations of technology, is the number line at School S; a feature used to assist children with their numeracy. This is shown in Figure 6-10.



Figure 6-10 The number line at School S

The Year 5 children reported that overall this was less popular than average. Naturally many of the children's comments referred to mathematics and whether they liked the subject or not. Kelly says 'I don't like maths,' whereas Kieran thinks it is his 'best subject.' A number of the children, such as Ricky, mentions that 'it sometimes helps.' Libby however is thinking more aesthetically: 'it has been up for ages. I like change.'



It is slightly more popular with the girls  in the class than the boys . Boys who are perceived to behave well are most favourable and there is a significant decline in popularity for boys who are thought by the teacher to be of low ability. Girls' positive identification, on the other hand, is lowest for those who perceive their ability to be high and also those whom the teacher believes to be of high ability.

Table 6-8, illustrates a very definite reaction of children with low belonging to the number line, indicating how an achievement culture of schools and its communication can disaffect children. This is a quite different reaction from the keyboard and projector which appear not to alienate children.













| | Boys | | Girls | |
|------------------|---|---|---|---|
| | Overall | Number Line | Overall | Number Line |
| High belonging |  |  |  |  |
| Medium belonging |  |  |  |  |
| Low belonging |  |  |  |  |

Table 6-8 Identification with the number line by High, Medium and Low belonging boys and girls - Year 5 - School S

6.4.4 Review

If factors governing inclusion relate to children's perceptions of ability, these three examples of learning tools in the classroom are revealing. It would appear that children generally relate well to the use of technology and that the keyboard and the whiteboard/projector are identified positively by those with low and high self-concepts and belonging, alike. This compares with the number line which appealed mainly to those with higher self-concepts and belonging in general.

While Page (2008) maintains that technology should underpin the next generation of schools and personalised learning, as a note of caution the responses do indicate a sense of escape from the main learning activity of the class. It is in these classes considered to be a reward and therefore, as technology becomes more ubiquitous, children may associate this more directly with cultures they wish to escape from. Certainly there is a risk derived from appropriation of children's refuges and also from the possible encouragement of less social learning.

6.5 Children's relationships with visual rules

So far the research has identified socialisation and organisation as central and continuingly relevant concerns of schools. Commonly this manifests itself in a strong focus on children's behaviour and Chapter 5 illustrated the relevance of this in determining children's well-being and overall belonging to school. As a result of the concentration on behaviour, rules played a major role in the daily lives of both of the study schools and, in one form or another, tended to dictate the communicative environment, particularly in School S.

It is typical that these rules are produced by the adults in the school, and can be viewed as the forbearance of the cultural school which communicates how children should participate and interact within the school setting. Relevantly the Class 3 rules at School A were drawn up collaboratively with the class although the children's perceptions of them were not markedly different.

6.5.1 The School A Charter

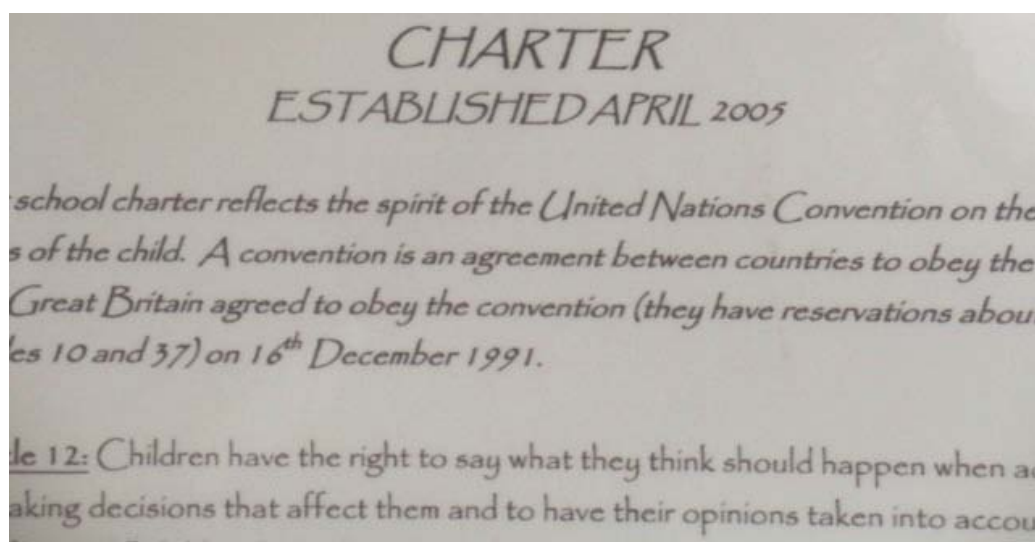


Figure 6-11 The School A Charter

The School A Charter is presented as an official document, choosing to exemplify its gravity rather than attempt more child-friendly communication. By not deliberately engaging the child from a stylistic point of view, the communication might seem to lack impact and, despite its perceived importance, only half (46%) of the Turtles recognised it and knew what it was; in Class 3, however, this figure increased to nearly three quarters (72%). By comparison the Turtles and Class 3 recognised and understood 86% and 88% respectively of all the images. While this probably points to its inaccessible written style, with Jake mentioning that it is 'hard to read,' it may also relate to its inconspicuous position in the corridor and its size. (Recognition and understanding results in relation to belonging and popularity are shown in Appendix 11).

In the Turtles the rules are highly unpopular with Year 1 children, a group which would perhaps be most expected to struggle with comprehension. Their lack of familiarity is expressed by Robert who was only able to describe the Charter as 'writing.' Also, however, for the youngest children who rue the loss of the freedom to play in the reception class and preschool, this response conceivably represents their reaction to conformance. Alex for example says 'I don't like rules' and Maria comments that 'I want to do my own thing.' Despite issues of comprehension, therefore, it is clear that many of the children respect the gravity of the communication. David, though not fully understanding the content, remarks that 'they (the rules) are serious.' Therefore the Charter, in its current form, does appear to serve a purpose in communicating the ethos.

The older children's comments similarly present a noticeable split in Class 3 whereby some children believe that it is good to have rules because they provide something to follow whilst others feel constrained by them. Ross says 'the Charter sucks' and Sophie, whose overall belonging to school is low, complains that 'I already know it. I don't like to look at it.' Interestingly Sophie implies that the rules of the school are so ubiquitous that communication in this way is unnecessary.

Despite Sophie's comments, however, the divide is noticeably by gender. Table 6-9 illustrates that boys' positive identification with the Charter is lower generally than for girls but nonetheless it drops noticeably further for boys with low belonging. It is apparent therefore that boys' relationships with rules and their communication directly relate to their feelings of well-being and inclusion. Table 6-10 highlights the connection between culture and behaviour illustrating how boys whom the teacher perceives to behave relatively poorly are least favourable to the Charter. Despite this the overall analysis in Chapter 5 indicated that behaving well is socially beneficial, highlighting the difference between perception and reality.

| | Boys | | Girls | |
|------------------|---------|-------------|---------|-------------|
| | Overall | The Charter | Overall | The Charter |
| High belonging | | | | |
| Medium belonging | | | | |
| Low belonging | | | | |

Table 6-9 The Charter - Belonging by Gender - Year 5 & 6 - School A

| | Boys |
|---|---------|
| Teacher's perception of boy's behaviour | Charter |
| High | |
| Medium | |
| Low | |

Table 6-10 Boys' Identification with the Charter by High, Medium and Low perceived behaviour (by teacher) - Year 5 & 6 - School A

By contrast girls are on the whole more accepting of rules and their communication and therefore a girls' belonging and hence inclusion are perhaps less determined by the existence of authority and boundaries. If however, the responses of the Turtle girls can be taken as a general indication of how younger girls feel then the strong relationship shown with belonging would indicate that

girls warm to the existence of rules as they get older. Consistently girls state that the notice 'Keeps us safe,' indicating a sense of protection which was mentioned in 6.2.2 above.

6.5.2 The School S Code

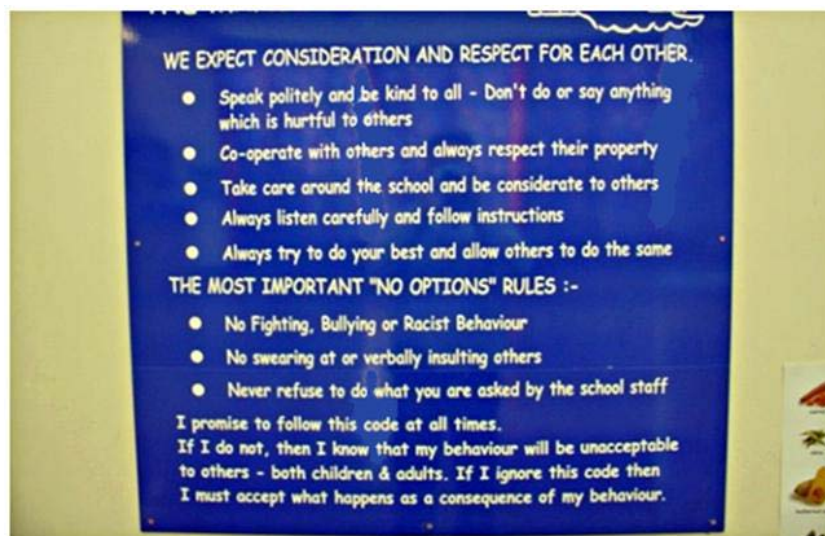


Figure 6-12 The School S Code

Compared with the School A Charter, the School S Code shown in Figure 6-12 is a more prominently displayed set of school rules located in the school hall. Recognition and understanding varies from 67% to 100% between the younger and older classes, which is considerably higher than School A.

However, the responses of the children are consistent with School A, whereby positive identification with the display is less for the boys. Similarly, mirroring School A, girls' positive identification increases with age and it is also clear that older boys in the outer social circle are most favourable to the rules at both schools.

The older Barracudas are more conscious of the impact of rules on their daily lives. Bethany remarks that, 'we follow rules but sometimes it's hard,' while Oscar says that rules make him feel secure. The boys certainly also become less inclined towards the rules as they get older, although the boys in the outer social circle are comparatively more favourable, mirroring School A.

Comparing positive identification with the older boys' and girls' overall belonging (Table 6-11), there are some key differences with School A. The boys express greater affinity overall at School S although positive identification similarly drops off for boys exhibiting low belonging. This probably indicates the social nature apparent in School S. Girls again are more favourable but positive

identification relates emphatically to high belonging, suggesting that overall belonging is strongly related to cultural alignment in a more resounding way than in School A.













| | Boys | | Girls | |
|------------------|---|---|---|---|
| | Overall | School S Code | Overall | School S Code |
| High belonging |  |  |  |  |
| Medium belonging |  |  |  |  |
| Low belonging |  |  |  |  |

Table 6-11 Identification with the School S Code by High, Medium and Low belonging boys and girls - Year 5 - School S

6.5.3 Bullying notice at School S

'It says don't be mean.'



Figure 6-13 The bullying notice at School S

Although rules have been shown to be least popular with boys in both schools, the School S boys



relate much more to the bullying notice than they do with the School S Code ,
for example. Bullying is clearly an emotive subject and the notice evokes mixed reactions. Rosie
says that it ‘makes me sad and happy’ meaning that she is sad because it reminds her that
bullying exists but happy that it is taken seriously and efforts are made to prevent it from
happening. Brooke reports that she was bullied for five years.



For all children, positive identification increases towards the outer social circle. For boys, on the
other hand, it is positively linked to those in the low learning group and those whom the teacher
perceives to be of lower ability. This indicates that the definition of achievement and ability may
provide a basis for bullying and in this sense grouping may again be seen to be counterproductive
from the point of view of inclusion.

6.5.4 Review

Children’s responses to the communication of rules generally illustrated consistent patterns which
prevailed over differences in aesthetics. However, the greater recognition in School S does appear
to be linked with style and location, but also more consistent reference in assemblies.

Children identifying strongly with rules generally linked this to feelings of security and safety and
positive identification increased towards the outer social circle in both schools. The importance of
the environment as the *third teacher*, described by Nicholson (2005), in this case significantly
relates to adult arbitration of the child’s social world. While this might seem like a negative role in
light of Rousseau’s (2004) contentions for example, rather than being rejected by the children, on
the whole the existence and communication of rules is welcomed, particularly as children get
older. On the whole concerns of security appear to precede achievement.

Within this overall picture, specifically boys are less favourable particularly as their belonging
declines. The negative reaction to these rules of boys perceived to behave least well is potentially
evidence that whether explicit or not, rules are often physically defined. It is quite feasible from
the preceding discussion that these are children who are perceived to behave poorly and for
whom non-prescriptive design principles, like those incorporated in the learning island, may well
be beneficial.

6.6 Children's relationships with traditional design features

Chapter 2 proposed the idea that the legacy of Victorian school design determines a great deal of the psychological school environment still in existence today. In one respect the operation of the school is partly guided by its physical form sending out messages relating to control and order. Chapter 5 concluded that many of these messages are subliminal and determine some of the important perceptions of the teacher.

This section looks at how more traditional features like the school hall, the playground and the library relate to children's belonging and inclusion.

6.6.1 The hall floor at School S

The hall was an integral part of Robson's (1877) Board schools and has generally prevailed in school design ever since. The argument for open plan schools was based on the premise that open spaces lead to freedom and discovery supporting independent learning yet, as Brogden (2007) remarks, these spaces became more restrictive than seen in enclosed classrooms. The hall is another example of how an open space is generally heavily controlled and the potential social interaction is curtailed.

Firstly it appears from the children's responses that the hall at School S is generally disliked. Children indicate that the hall floor, shown in Figure 6-14, is a symbol of long, tiresome, uncomfortable assemblies. Assemblies are a traditional method of whole school communication which, according to Peterson & Deal (2002), carries a specific cultural and social significance. While taking part in the assembly represents participation in the wider school community, there is also an element of social training of the children. Elias & Berk (2002) note the ability to sit quietly, listen and to show patience and respect are behavioural traits which continue to be valued and important in children's self-regulation. Although assemblies they are often no longer a daily occurrence, they remain a central part of a school routine and 'may be seen as a means of expressing the sense of community which makes up the school (Pollard, 1985, p.125).'

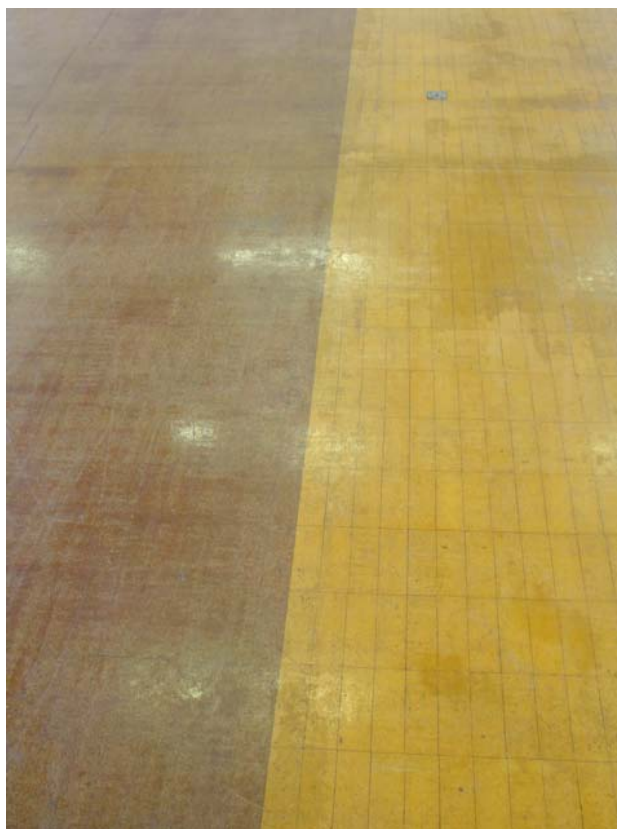


Figure 6-14 The hall floor at School S

In School S, the children sit in class lines with the youngest children at the front of the hall and Year 6, who will have benches to sit on, at the back. The image shown to children during the study depicted the detail of the parquet floor and the responses implied that the children are intimate with how it looks and feels. The teachers sit around the outside of the hall on plastic chairs, alongside their classes, and able to look along the rows.

Remembering Tanya's drawing in Chapter 4, unsurprisingly the children at School S reveal that their experiences relate to boredom and discomfort. Charley says that you 'keep getting up and down' and Megan more directly says 'I don't like assemblies.' It is understood that the socialisation role of schools will not always be seen favourably by children who may feel constrained by certain school practices like assemblies. In addition there are concerns about dirtiness, slipperiness and danger. Emily remarks that the floor is 'a bit dirty', and Paige mentions that she 'tripped up once.' Josh complains that 'You hurt yourself.'

Table 6-12 indicates that girls who, overall, exhibit low belonging to the physical school, are particularly disinclined towards the hall floor. Supporting this analysis, there is a noticeably low

positive identification from girls who perceive their behaviour to be poor; it has been shown by Kellett (2005) that boredom can elicit behaviour for which children may be very publicly told off.

| | Boys | | Girls | |
|------------------|---------|------------|---------|------------|
| | Overall | Hall Floor | Overall | Hall Floor |
| High belonging | | | | |
| Medium belonging | | | | |
| Low belonging | | | | |

Table 6-12 Identification with the hall floor by High, Medium and Low belonging boys and girls - Year 5 - School S

Nevertheless, considering the class social circle, girls' level of identification with the hall floor does not reflect their social position whereas boys on the other hand tell a different story. Table 6-13 indicates that the hall floor and what it symbolised was most popular with the boys in the outer social circle. Positive identification is also evident from the boys whom the teacher perceives to have low ability who, in Chapter 4, were also shown typically to be less socially central.

| | Boys | | Girls | |
|--------|------------|------------|------------|------------|
| | All images | Hall floor | All images | Hall floor |
| Centre | | | | |
| Middle | | | | |
| Outer | | | | |

Table 6-13 Identification with the hall floor across the social circle - Year 5 Boys and Girls - School S

Unsurprisingly the image is equally unpopular with the younger children and it is visible that, once again, it becomes more popular, or at least less unpopular, with boys on the outer social circle.

The implication is that, specifically from a social perspective, boys on the social edges can favour spaces which promote communal whole school activity. The assembly certainly is a more socially anonymous experience and has a strong adult controlling presence. Based on the social intensity of the Barracudas represented in Chapter 5 and the references to fighting and bullying in Chapter 3, this is a relatively safe, controlled social space. It can also be seen as a place which children do not associate with having to do work and it may even offer an alternative to learning spaces publicly oriented around ability.

6.6.2 The juniors playground at School S



Figure 6-15 The Juniors' playground at School S

The playground is a feature as synonymous with schools as the classroom or the assembly hall and was a requirement of elementary schools following the 1870 Act (Seaborne & Lowe, 1977). The playground is typically where one might expect children to feel the most unsupervised and, as such, the social interaction to be more freely determined by the children. This compares with the hall in which interaction is controlled and possibly curtailed. It may also be expected that children who are least academically inclined will identify strongly with the playground; an escape in other words.

The junior playground at School S shown in Figure 6-15 is a tarmacked area accessible from the Year 5 and Year 6 classrooms and bordering the school field. The area contains various markings indicating a football pitch and tennis courts, although there are no nets. On the edge of the playground by the school field there is a circular bench surrounding a tree. Trees also line one edge of the playground, running alongside the perimeter fence.

When the children refer to the playground, comments tend to relate to sports. Bethany mentions that ‘we play tennis, and everything’ and endorses the previous appraisal of the class as a very physical, sporty group. Less common than references to sport were suggestions about the social opportunity presented by playtime. Paige says that you ‘see friends and play’ which indicates that she either likes to meet with children from other classes or she strongly differentiates between the social interaction in the class and that of the playground. In addition there is also a suggestion of pride at the facilities offered by the school exposing how a sense of identity can be derived from the physical school: Sally claims that ‘because of the paint we play games that other schools can’t.’ Sally’s comment also indicates the strength of exclusivity shown by groups children feel they belong to (Tajfel & Turner, 1979).

Intuitively, one might suppose that the most socially central children and the children who feel most constrained indoors would be favourable to the playground space. The playground, although not entirely unregulated, is where the children can freely express their social play and in this respect it is understandable that the children’s perceptions of the space might be reflected by their social positions.

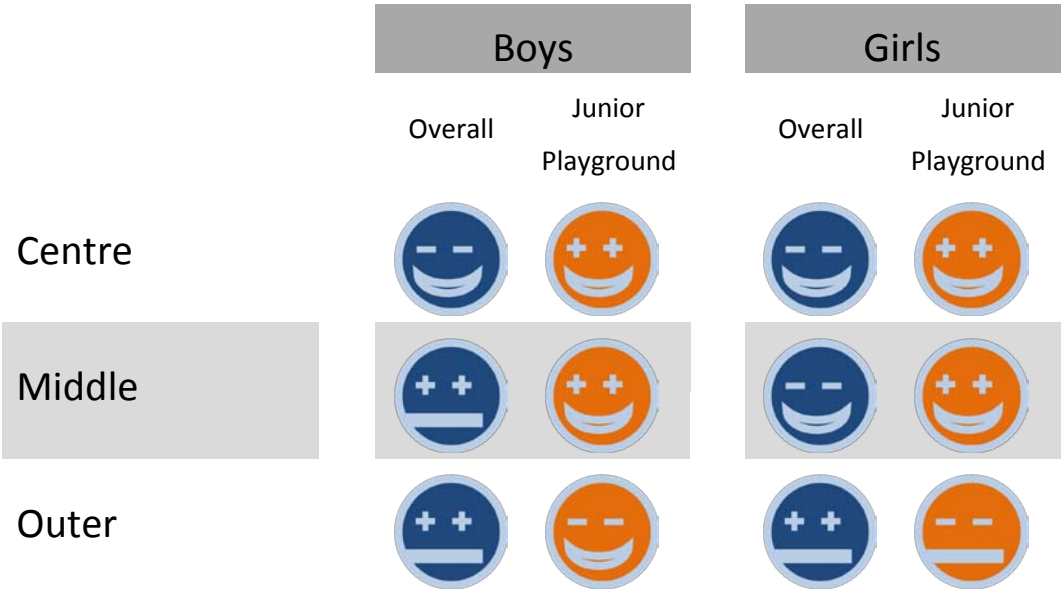


Table 6-14 Identification with the Juniors’ playground across the social circle - Year 5 Boys and Girls - School S

Table 6-14 does illustrate this point by showing that positive identification with the playground drops in the outer social circle for boys, and more markedly, for girls. However, rather than being a place for the children who are less academically able and perhaps less happy in formal learning environments, the children's identification demonstrates the opposite.

Children's responses suggest that those identifying most positively are typically the ones who could be described as illustrating the 'best' qualities, academically and behaviourally. Year 5 girls, for example, who identify least with the playground, demonstrate the lowest perceived ability and behaviour.

For Year 5 boys and girls the playground is also directly linked with expressions of high happiness learning, which indicates that feelings in the classroom can overflow into the more social, communal aspects of the school. It is arguable that the teacher, as the personification of the school culture, is somehow omnipresent and that a child's well-being begins in the classroom.

Table 6-15 reveals an even stronger relationship between the girls' overall feelings of belonging to the school and their identification with the playground. Girls with the highest belonging identify most profoundly with the playground while the girls with the lowest overall belonging relate to it less than they would to other aspects of the physical school. This indicates that a powerful consideration for girls and their well-being at school is their outdoor social space endorsing the conclusions of Chapter 4 which discussed the importance of outdoor furniture.

Boys, on the other hand, identify with the playground more than the majority of other school features. Although this declines as their overall belonging declines, it remains relatively high. The study reveals that boys' positive identification with the playground is more resilient to the influence of popularity and belonging.

In contrast with the older girls, the playground is popular with the Panda girls with the lowest perceived behaviour and low perceptions of ability. This is what may naturally be expected, as proposed in the opening to this section, and implies that children who do not fit into the school culture gradually begin to feel they have no social territory.













| | Boys | | Girls | |
|------------------|---|---|---|---|
| | All images | Junior Playground | All images | Junior Playground |
| High belonging |  |  |  |  |
| Medium belonging |  |  |  |  |
| Low belonging |  |  |  |  |

Table 6-15 Identification with the Juniors' playground by High, Medium and Low belonging boys and girls - Year 5 - School S

6.6.3 The library at School A

Chapter 4 discussed the historic connection between books and schools and suggested that children who like reading books or like to be in the library will probably identify positively with the culture of the school. The research presented the School A children with an image of their library and revealed results opposite from those predicted.

In the Turtles, positive identification generally is related to perceptions of good behaviour rather than perceptions of ability; Table 6-16 shows the responses of the children to the image of the library based on their teacher's perception of their behaviour and ability.

By comparison, in Class 3, the library is most popular with the girls and consistent with research which highlights boys' relative lack of interest in reading (Goldberg & Rosswell, 2002). This is contributed to by the generally low belonging of the Year 6 boys which is very evident in their responses to the library.

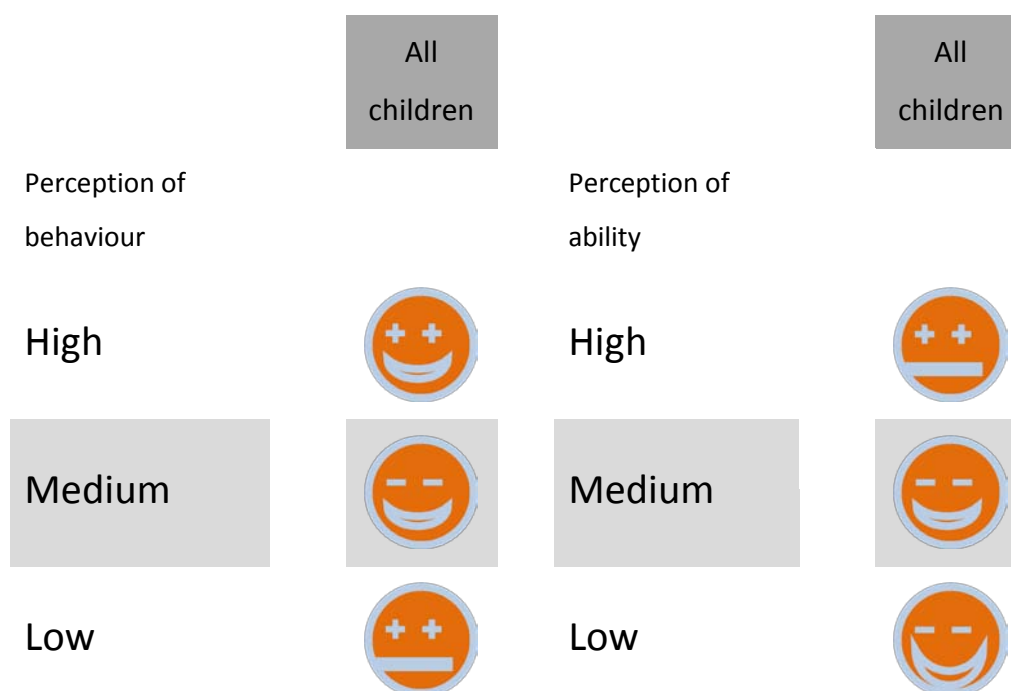


Table 6-16 Identification with the library by High, Medium and Low perceived behaviour and ability (by the teacher) - Year 1 & 2 – School A

As a continuation of the relationship shown by the Turtles, the girls in Class 3 demonstrate the greatest positive identification if they or the teacher perceive their ability to be low. Furthermore Chapter 5 discussed the social advantages of being a *medium* girl and the Class 3 girls relate most to the library if their behaviour is medium.

Boys' responses no longer show a particular relationship with ability and it is most apparent that their identification with the library is determined by how good their behaviour is deemed to be. This is illustrated in Table 6-17.













| | Boys | | | Girls | |
|-------------------------|---|---|-----------------------|---|---|
| Perception of behaviour | Child | Teacher | Perception of ability | Child | Teacher |
| High |  |  | High |  |  |
| Medium |  |  | Medium |  |  |
| Low |  |  | Low |  |  |

Table 6-17 Identification with the library by High, Medium and Low perceived behaviour (Boys) and ability (Girls) (child & teacher) - Year 5 & 6 – School A

6.6.4 The abacus at School A



Figure 6-16 The abacus at School A

The abacus at School A, shown in Figure 6-16 was located in the Puffins' classroom which was the home for a mixture of Reception and Year 1 children. As a result, it was clear that some of the Turtles' responses related more to feelings about moving up from that class to actual feelings about the abacus. This is consistent with the contention made in Chapter 4 that, as a rule, a child's (social) association prevails, superseding function and aesthetics. Alexia mentions that 'we could

play' indicating that she was less comfortable with a more serious approach to school in the Turtles class. Charles merely said, 'it's so sad.'

6.6.5 Review

The school features covered by this section have ranged from outdoor play areas, to architecture and objects which can be considered traditional elements of the physical school. The results indicate a number of relevant findings.

Firstly perhaps the school environment is rightly referred to as the third teacher but, while Nicholson (2005) speaks of this with progressive motives in mind, the evidence is that the third teacher is supporting a traditional behavioural culture. Within this assertion, it is implied that children's well-being is predominantly derived from the classroom.

The playground represents the provision of supervised, though less regulated social space but the implication of the research is that, by the time children are reaching the latter years of primary school, their social experience is very closely connected to their academic experience. In this way the playground does not provide any sort of refuge for children who are perceived less favourably because their social status has become linked with their classroom status. A loss of social territory in play areas therefore is predicted as a result of classroom dynamics.

It would appear that other areas, like the hall and the library, for example offer a more socially anonymous adult controlled environment, with which children of lower academic self-concepts identify more. It is relevant that the girls with low ability and who are less central find an increased pleasure, or escape, in books. For the older boys it is notable that this symbol of school might be more associated with behaviour than ability, and more emphatically based on the teacher's perception of the child rather than the child's. Potentially this is an important insight into why boys are seen to be less enthusiastic about reading and how the blurring between ability and behaviour manifests itself.

6.7 Children's relationships with inanimate features

In Chapter 4 the possibility was raised that architecture is removed from the experience of the child to the point that its contribution to a child's well-being may have been exaggerated. Chapter 5 did suggest that certain children are drawn towards inanimate objects or places and the belonging studies present examples of features being significant for children who are not socially central. This is relevant therefore to concerns of belonging and inclusion.

Although this thesis is generally not involved in the fundamental requirements of a school building such as structural quality, air quality, temperature and light, there is evidence that certain of these building features are appropriated by children for play and territorial purposes. Medd's (1998) observation of this phenomenon led to the nooks and crannies approach to Eveline Lowe and Finmere School.

6.7.1 The chimney



Figure 6-17 The chimney at School A

The chimney at School A, illustrated in Figure 6-17, provoked comments like 'a nice warm fire but a wolf might come down the chimney', and Robyn said 'it scared me when I was little.' As children get older comments appear to become less imaginative and are replaced by logical associations with the chimney's function, safety and condition. Connor complains that 'balls get stuck there,' and Danielle remarks on its aesthetics: 'it looks like it's broken.'

Based on children's observations, the study suggests for the younger children that architectural features can have a potentially fairytale contribution to the school's aesthetics bringing with it heroes and villains; simply, stimulants to the imagination. Although on balance it is relatively unpopular, Year 1 boys show a particular inclination towards the chimney.

Despite this, if the older children’s positive identification is reviewed across the class social circle, as in Table 6-18, belonging is relatively greater in the outer circle. The contrast with the social centre is most pronounced for the girls and the results also suggest that there is an increase in positive identification by girls with lower self-concepts and lower belonging to school overall. This was identified at a more general level in Chapter 5.

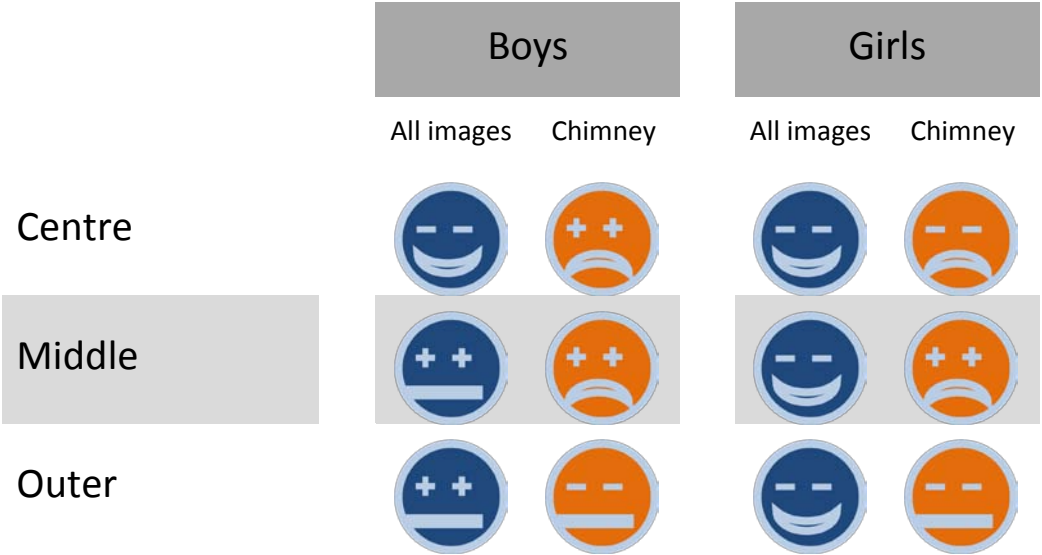


Table 6-18 Identification with the chimney across the social circle - Year 5 & 6 Boys and Girls – School A

Noticeably for the boys, there is a strong connection between positive identification and boys who express low happiness about school, as illustrated in Table 6-19.

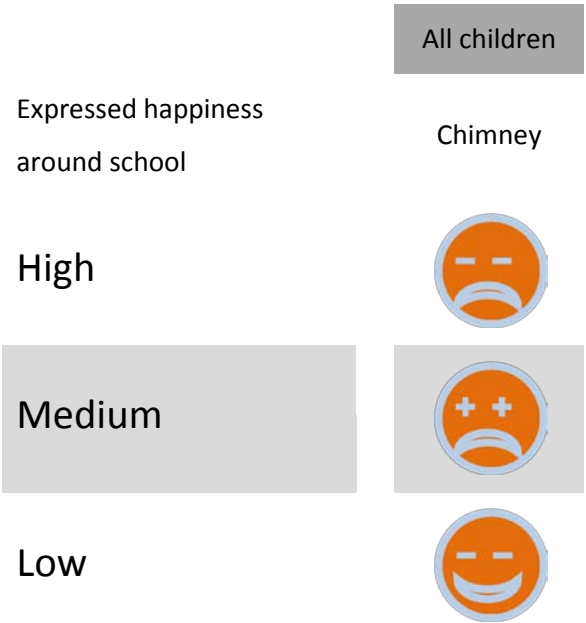


Table 6-19 Identification with the chimney by High, Medium and Low expressed happiness around school - Year 5 & 6 - School A

6.7.2 The crocodile step

The old crumbling step in the School A playground (Figure 6-18) elicited a variety of responses. It is notable that the older children in Class 3 refer mainly to the aesthetics of the step or to the safety aspects of having a broken step. Victoria says 'it's old and not nice to look at' and Georgia describes it as 'wet and broken.' Children appear to be conscious of the age of features of the school but this is mentioned in relation to condition and not necessarily indicating a desire for newness. This is consistent with the findings of PWC (2007). In fact Burke, from a historian's perspective, quotes Peter Blundell-Jones who suggests instead that a school derives a complex and meaningful character from its age and changes of use over time.

..... the fabric is embedded with memories and past encounters, an accumulation of gestures which has provided continuity between generations allows for all kinds of interpretation and prompts various deliberate or accidental redevelopments (2006, p.11).

The Turtles signify a quite different relationship with the step by referring to play: Robert immediately says 'Crocodiles!' which Lauren clarifies by saying 'We play crocodiles. It should be bigger.'



Figure 6-18 The crocodile step at School A

Crocodiles is a game in which children who are not on the step are crocodiles and the children who are on the step avoid being caught and becoming a crocodile. The responses tend to confirm the supposition made in Chapter 3 that the step represents important territory, especially for the

Year 2 girls. It is evidence of how a very functional architectural feature is creatively incorporated into play and takes on a particular social role.

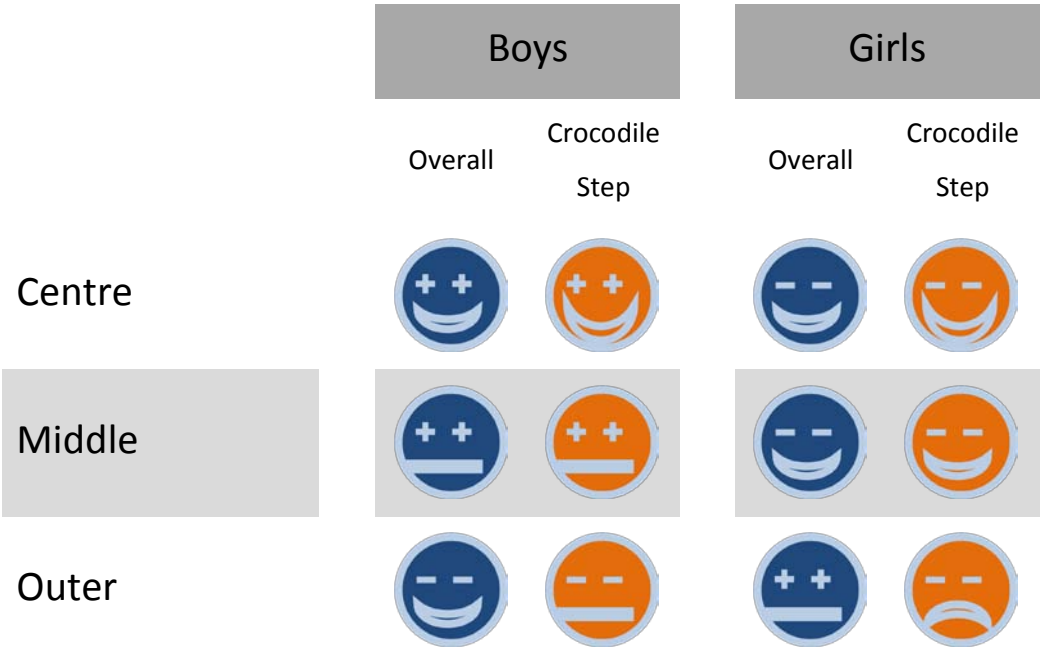


Table 6-20 Identification with the crocodile step across the social circle - Year 1/2 Boys and Girls – School A


As a social feature which appears to be territorial, positive identification diminishes considerably towards the edge of the social circle, shown in Table 6-20. The decline in popularity is most evident for the girls on the outer social circle. Positive identification is linked with confident, well-behaved and socially central girls with high belonging.


Although it is very popular with boys in the social centre it tends also to be linked to those with the lowest belonging. This relationship is detailed in Table 6-21 and demonstrates that boys exhibit the opposite pattern from usual in that positive identification increases with lower belonging and suggests therefore that the appeal is not necessarily social and may derive from the step’s aesthetic qualities. James discussed in detail the step as Captain Morphus’ headquarters and the imaginative world which the step offers at playtime. The table also illustrates girls’ identification with the step and suggests how being involved in social interaction is fundamental to their sense of well-being.

| | Boys | | Girls | |
|------------------|------------|----------------|------------|----------------|
| | All images | Crocodile step | All images | Crocodile step |
| High belonging | | | | |
| Medium belonging | | | | |
| Low belonging | | | | |

Table 6-21 Identification with the crocodile step by High, Medium and Low belonging boys and girls - Year 1 & 2 - School A

When these results are compared with the School S Year 1 & 2 responses to a personal 'possession' like the coat hook, the opposite result can be seen in which girls' positive

identification is evident for those with low belonging  and boys' positive identification is

most notable for high belonging boys . This suggests that issues of ownership for girls may transfer from social ownership to personal ownership for girls as belonging declines and the other way round for boys. However, this would require further investigation.

Despite remembering *Crocodiles*, Class 3's comments indicate that the impact of this feature has changed with age. It no longer has such a noticeable social function and it is generally less popular across the whole social circle. The outer girls are least keen, perhaps remembering previous feelings of exclusion.

6.7.3 The wall vent at School A

The crocodile step represented an architectural feature which had been appropriated by the Turtle children and overall was most popular with the girls. A similar feature which divides the

Turtles class by gender is the air vent on the kitchen wall in the playground, shown in Figure 6-19.

In this case it is popular with boys  and very unpopular with the girls .



Figure 6-19 The wall vent in the playground - School A

Some of the older children have a practical view: Georgia, thinking aesthetically, maintains that ‘it ruins the wall,’ and Sophie asks whether it could be hidden. Sam, on the other hand, points out that you can ‘smell the food’ and Charles says that ‘you can warm up.’

In the Turtles class, the majority of the boys who discussed the vent, however, talk about shouting through it or looking through it to see Mrs Curtis. It is a similar example of how functional architecture is creatively used and in this case, how this use can be divided quite clearly along age and gender lines.

The vent tends to be popular with boys with high self-concepts, ability-wise and behaviourally, although the teacher’s perceptions tend to be lower in both respects. It is also notable that the child’s expression of low happiness whilst learning and high happiness around school are both factors in positive identification.

In relation to the social circle the vent is most popular with the central boys and identification is noticeably greater for boys exhibiting low overall belonging to school, shown in Table 6-22 . It

would appear to be a boy's idea of fun and naughtiness with an indication that it is a reaction to authority, as was concluded for the gate release earlier in the chapter (p. 212).







| Boys | |
|------------------|--|
| | All images Wall Vent |
| High belonging |   |
| Medium belonging |   |
| Low belonging |   |

Table 6-22 Identification with the wall vent by High, Medium and Low belonging - Boys - Year 1 & 2 - School A

6.7.4 The School S playground wall



It's a wall where you can't climb.

Several images at School S, including the picture of the playground wall in Figure 6-20 and of the hall rafters, provoked comments like Pritesh's which describe frustration at a physical opportunity being offered but outlawed by rules. However, it would seem too tempting for some: Josh admits that he likes 'climbing up.'



Figure 6-20 The playground wall at School S

Boys appear to be split in their feelings towards it and the study reveals that it is profoundly

unpopular with year 1 boys  whilst considerably popular with Year 2 boys . The overall belonging to school of Year 2 boys at School S is considerably lower but the image of the playground wall is a good example of a contradiction to this trend: it is the second most popular feature of the Year 2 boys. However, it is last on the list of the Year 1 boys which suggests a reactionary response based on age groupings.

Girls appear to be negative towards this feature and there is an indication that there is also a reaction to the Year 2 boys' liking for it. However, girls' comments do not express this and relate instead to the materials and its texture: Brooke's says 'I don't like touching the bricks,' and 'it makes your hands greasy.' Any relatively positive identification comes from girls who express low happiness learning.

6.7.5 Review

This section describes a fundamental difference between design and use, and highlights that if architects consider only design basics, the children's use will naturally make the designs relevant to their well-being.

A great deal of this thesis has pinpointed design and use which relates to adult layering of a culture upon the child. These examples of nondescript architectural features indicates the invisible culture of children and rather than being the product of the school and its broader community, there are ways in which children can be the architects of their own well-being.

Children appear to use design features to creatively develop play which in turn manifests social territory and the potential for inclusion and exclusion. Features like the wall vent and the crocodile step also demonstrate that this childhood culture is one of tradition, passed down between age groups. Moreover, it would appear that the associated physical territories are also inherited.

The playground wall for example was very popular with Year 2 boys whereas the Year 1 boys and the girls demonstrated an equal and opposite reaction. The reverse of this occurred for the class car mat and illustrates that it is not only outdoor spaces which become aligned/appropriated by boys or girls of different ages. Equally, the wooden train is one of the most popular elements for the socially central girls and for the central boys it is least appealing. The reactive nature of identification is also illustrated by the ability group sign at School S (p. 221) which is highly popular with Year 2 and highly unpopular with Year 1.

This is indicative of subtle territory but it is relevant that all these examples are from the youngest class at School S, a school which has been described as a more socially intense school. It would appear that this relationship with the physical school represents an establishment of this social culture and elements of hierarchy with clear evidence of school groupings affecting behaviour.

Finally, the wall vent reveals that certain architectural features are identified with most by boys who feel less belonging to the school overall. It is identifiable that these boys have found an outlet for certain behaviours which would not necessarily be encouraged but are relatively harmless, assuming that Mrs Curtis is not actually in earshot. Arguably this type of behaviour forms a reaction to perceived constraints of what remains a powerful school culture.

6.8 Encouraging inclusion and identity

The well-being model developed in Chapter 1 later proposed that influencing a child's personal identity is dependent on belonging which in turn is dependent on multiple factors combining to positively influence a child's perspective.

As previously explained, inclusion and identity are very closely related and Chapter 1 maintained that contriving either through design is problematical particularly in the absence of regard for the day-to-day demands of a child's well-being. While the hall, the playground and the library might be considered symbols of the school, there is a tradition of providing more graphical or object-based representations of identity.

6.8.1 Identity symbols

Chapter 3 observed that symbols of the class, or mascots, like the turtle at School A can be used to motivate the child. Manfred the Bear at School S, although he went unmentioned in the studies in Chapter 3, evoked some similar responses. However, the comments of the class observed were more personal than those at School A. For instance Megan claims that she likes to touch him whilst other comments refer to an imaginative relationship which the children have developed: Patrick says 'I won him a medal – break dancing' and Jamil says 'he follows me shopping.' Certainly the girls' reaction which links the bear positively to those with lower belonging implies that Manfred may not be as imbued with cultural significance as perhaps the Turtle is in School A. This is illustrated in Table 6-23.











| | Boys | | Girls | |
|------------------|---|--|---|---|
| | All images | Manfred | All images | Manfred |
| High belonging |  |  |  |  |
| Medium belonging |  |  |  |  |
| Low belonging |  |  |  |  |

Table 6-23 Identification with Manfred the Bear by High, Medium and Low belonging boys and girls
- Year 1 & 2 - School S



Figure 6-21 School badge and cardigan - School A

Superficially girls appear to be more inclined towards symbols of community and groups. Considering the school badge at School A (Figure 6-21), it is emphatically linked to belonging for the younger children. However, although intuitively it should appeal to those who are aligned to the culture of the school, it is notable that it is identified with most by the less popular older girls, including those with lower self-concepts or belonging. This is shown in Table 6-24.

| | Boys | | Girls | |
|------------------|---------|--------------|---------|--------------|
| | Overall | School Badge | Overall | School Badge |
| High belonging | | | | |
| Medium belonging | | | | |
| Low belonging | | | | |

Table 6-24 The school badge - Belonging by Gender - Year 5 & 6 - School A

Visibly, less socially central girls or less able girls positively hold on to these inanimate communal/symbolic images. Boys, on the other hand, appear to link this type of symbolism with

successes at school. Overall, as might be expected by now, those whom the teacher perceives to behave well are the most positive.



Figure 6-22 The School S school logo

Compared with the School A logo, the School S logo (Figure 6-22) is similarly popular with their

Year 5 counterparts although in this case it is slightly more so with the boys



than the

girls



. Potentially this is the product of the aesthetic of the symbol but it is also worth pointing out that the school badge at School A was detectably worn by a girl and in some cases the children knew which reception child was wearing it. This underscores the comments made in Chapter 5 which identified that the photographs used in photo elicitation can evoke a variety of responses; here it is possible that the older girls with lower belonging and lower self concepts were identifying with what it meant to be in reception more than with the badge itself.

6.8.2 The crucifix

This crucifix is a highly significant symbol in School A and it would be expected that positive identification would represent to some degree how much the children are generally aligned to the school.



Figure 6-23 The crucifix in the hall way at School A

Despite School A's status as a Church of England school there is only a limited amount of religious imagery within the school. A religious whole-school assembly is run once a week and, through conversation, the children appear to be very conscious of religion forming a central part of the school. Therefore, considering the children's responses to the crucifix provides an indication of identification with this aspect of the school ethos and leads to more general conclusions about the effect of symbols and identity.

Comments made by the children indicate a complex mixture of feelings towards this object. It makes some sad because they remember family members, often very close, who have died. Others comment that they are not religious, or indicate how they perceive the guiding nature of the object and, by implication, Jesus, and occasionally express sadness at Jesus' death. Michael says it is 'not nice to see the crucifixion' and Robyn mentions that it is a 'bit gloomy for school.' Although the response is not necessarily positive, the symbolic importance of the figure is very evident.

Making conclusions about what clearly provokes a complicated and contradictory set of emotions needs to be treated carefully. In Class 3 results defy any real interpretation beyond the consistency with the younger class in which boys are generally more favourable. Beyond this, by

the latter stages of school, religion and its expression through objects appears to have become a personal and complex issue.

In Year 1 and 2 a very distinctive pattern emerges for those children who perceive themselves to behave poorly, as illustrated in Table 6-25. Their averseness to the object goes beyond aesthetics and its ‘gloominess’ to suggest that it is seen as another level of authority which may judge the way the child acts.




| All children | |
|--|--|
| Child's perception of own behaviour | Crucifix |
| High |  |
| Medium |  |
| Low |  |

Table 6-25 Identification with the crucifix by High, Medium and Low perceived behaviour (child) - Year 1 & 2 - School A

6.8.3 The School S Hands



Figure 6-24 The School S Hands

The School S Hands is a fabric mural showing the multi-coloured hand prints of everyone in the school (See Figure 6-24). It is a community symbol which hangs in the hall. Ostensibly, it promotes identity and a fellowship, designed to inspire togetherness and collective achievement. It has been created by everybody and is visible in the most communal of areas in the school.

The Hands is an example of aesthetics/art seeking to communicate the idea of participation and inclusion within the school. Comparing it with other images it is relatively popular with the boys and the girls of both the School S classes.

Although it is generally popular for all Year 5 children this is most notable for more socially central children and positive identification decreases across the social circle. Additionally Table 6-26 illustrates that girls’ positive identification with the School S Hands is reasonably consistent whereas there is a link to boys’ overall belonging in which boys with high belonging are much more favourable to it; it would appear to have a limited galvanising effect on low belonging boys. Unlike boys, girls with low perceptions of ability prefer it.













| | Boys | | Girls | |
|------------------|---|--|---|---|
| | All images | School S Hands | All images | School S Hands |
| High belonging |  |  |  |  |
| Medium belonging |  |  |  |  |
| Low belonging |  |  |  |  |

Table 6-26 Identification with the School S Hands by High, Medium and Low belonging boys and girls - Year 5 - School S

Considering the younger Pandas, it is clearly very popular with the girls



and popular,

although slightly less so, with the boys



. Outside of the social centre, boys are less favourable to the School S Hands, as are boys who typically show lower belonging to the school. However girls in the outer circle and girls who exhibit low overall belonging are extremely enthusiastic about the Hands.

Overall boys and girls present opposing pictures and this type of imagery potentially has a greater, more inclusive effect on girls compared with boys.

6.8.4 The friendship bench



Figure 6-25 The friendship bench - School A

An example of the relationship between social interaction and the motivation for inclusion, based on the social circle, is the piece of outdoor furniture called the *friendship bench* at School A depicted in Figure 6-25.

This is an example of design imbued with a significant and well understood message. The simple idea is that, if a child feels lonely, they can sit on the bench and somebody will come to play with them.

The friendship bench attempts to encourage inclusive social interaction by applying a deliberate human layer of symbolism. In addition, its physical form symbolically is large, to hold a number of children, and embracing, as the wooden sides curve around the children sitting on it. This is a good example of how design and cultural intent combines. By way of its form, the bench may convey messages about inclusion, but there is additionally the verbal communication, even folklore, of its associated preferred behaviours; a responsibility shared by adults and children alike.

Anecdotal evidence from the children during the identity card research and other research in which the friendship bench emerged, testify to the friendship bench's success as a community symbol. Sophie, for example, says 'It works; people sit on it when they're upset.'

Also its physical condition does not seem to be questioned in the same way that children were critical of other ageing features of the school. The wood is well weathered and the carving of the name Georgina, who according to Freddy was the first headteacher, is heavily worn and faded. Its social importance appears to compensate for its aesthetic shortcomings.

Its use however goes beyond this basic intent of inclusive play and the bench is used as a communal area for children to talk while others use it as a base or stimulus for various games. Ross, playfully, states 'We sit chatting. Or say, "you love Georgina!"' and Alex, from the Turtles, reveals imaginative play stimulated by the carvings: 'You can rub cars on eagles and the raven turns into a man.'

Chapter 3 concluded that it had territorial value for the older girls and this is indicated by the relatively high positive identification with it for Class 3 girls. Informed by observation, in practice it represents a territorial possession of the older class which is clear when the whole school is on the playground. The identity card exercise reveals that this is primarily the domain of the Year 6 girls.

Its covert territorial role might seem at odds with its overt socially inclusive role but, even though it is emphatically popular with the more central girls, overall it is also more popular than other features for the least popular girls, as indicated in Table 6-27. On the whole boys in the outer social circle however relate no more to this than they do to other features whereas boys with low belonging do not relate well at all. This indicates again that girls are probably more inclined towards this type of symbolism than boys.













| | Boys | | Girls | |
|--------|---|---|---|---|
| | Overall | Friendship Bench | Overall | Friendship Bench |
| Centre |  |  |  |  |
| Middle |  |  |  |  |
| Outer |  |  |  |  |

Table 6-27 Identification with the friendship bench across the social circle - Year 5 & 6 Boys and Girls - School A

Additionally, with boys in mind, there is an argument that design aiming to socially engineer by targeting inclusion is contrived, and potentially counterproductive. It is possible that the children it aims to help actually feel less included because it exposes them socially. Lewis, who is in the outer social circle identifies his mixed feelings and Harry, having considered the image, remembers that ‘sometimes people make fun’ of him. Relative to other features of the school, however, it is consistently popular and significant feature of the school.













| | Boys | | Girls | |
|------------------|---|---|--|---|
| | Overall | Friendship Bench | Overall | Friendship Bench |
| High belonging |  |  |  |  |
| Medium belonging |  |  |  |  |
| Low belonging |  |  |  |  |

Table 6-28 The friendship bench - Belonging by Gender - Year 5 & 6 - School A

6.8.5 Review

On balance the use of symbolism as a method for influencing identity and inclusion are likely to be most effective for girls. As Paige comments, referring to the School S logo, it 'reminds me of school and the times you've had.' At various points the research highlights girls' enhanced connection with the community as a whole which would explain why this might be the case. Certainly there is an indication that socially excluded girls and girls with low belonging will identify positively with such images or places.

Boys, however, appear to be relatively unaffected by such efforts and it is likely that such symbols represent the aspects of school which originally contributed to their lower sense of belonging, potentially exacerbating feelings. On the basis of the evidence from the study symbolism works in a similar way whether expressed through furniture, objects or imagery.

It is also significant that positive identification is often about territory which can contribute to the undermining of inclusion.

These findings also have particular relevance for the pursuit of aesthetics which to date the thesis has been largely dismissive of in terms of longer term affective outcomes. Notably the illogic demonstrated in the findings of Tajfel & Turner (1979) in this particular case overrides the logic of the well-being model. Therefore there is clearly some scope for affecting children's belonging to school, although based on the longer cycles of school building this appears to remain an opportunity as part of the decorative/communicative environment rather than of architecture.

6.9 Summary

Progressing on from the investigation of particular features in Chapter 4, the research outlined in this chapter has more clearly divulged the unique culture of childhood, the existence of which was suggested originally in the introduction to this thesis. Images shown to the children elicited evidence of imagination, and both reactive and territorial behaviour. Up until now, the school culture has repeatedly been cited as the great influence on children's well-being yet this relationship with the physical school, initially at least, appears to occur independently of the school culture. Such play-related activity, this thesis suggests, is also independent of design, involving the creation of uses which were never intended. Children transformed the broken old step into the *Crocodile Step* on which they desperately try to stay safe from the crocodile-infested waters below, unaware of Captain Morphus' ongoing fight for supremacy in his adjacent headquarters. Further afield toy cars are turned into ravens on the friendship bench.

Unintended uses of design features would seem to be central to the child's social interaction. Allowing this unprovoked creativity to take place is of vital interest in the light of the Government's creativity agenda and, while the crocodile step or the games surrounding drains introduced in Chapter 4 might encourage designers to promote this type of creativity, this thesis identifies that encouraging prescription is the enemy of creativity; children make environments relevant to their well-being which, like self-esteem more specifically (Sullivan, 1953), may be actively maintained.

The almost invisible experience of children is revealed as a culture passed on through the years and which is related to the material school much more than it is to the discipline of design. Studies presented in this thesis pinpoint this as a timeless facet of school which has traditionally occurred in the playground but, while the behaviour may occur naturally, its expression is far from independent of school culture. The discussion surrounding the playground at School S demonstrates that, despite the opportunity for less rigidly regulated play, activity is surprisingly influenced by children's perceptions of academic ability, for example. Chapter 5 revealed that teachers' perceptions of ability and behaviour, and particularly ability groups are linked to children's popularity and therefore, while territorial play may be naturally derived in the children, the context for inclusion and exclusion is largely provided by the school culture. This it seems is the current effect of the omnipresent third teacher and in this way well-being can be seen to start in the classroom and the pivotal child-teacher relationship.

The influence of the culture on children's interaction with the physical school is further apparent when considering the wall vent and the gate release, illustrating how boys are playfully reacting and testing authority. Additionally it would seem that schools are indeed places of unfulfilled social and physical opportunities; long corridors in which the child cannot run, a chair which cannot be rocked, the School S playground wall which cannot be climbed and the hall rafters from which the ropes have been removed. These frustrations detrimentally affect identification with the school culture and must be a consideration of future design.

Not only do spaces and furniture direct well-being; the evidence from this chapter suggests that the communicative school environment indicates clearly to children what is considered to be good and aspects of the material school are appropriated for the achievement of these ends. Appropriation of comfort and sporting symbols was typically found in both schools. The environment supports and often rewards conformance and as children become more aligned to rules and behavioural norms the children's social outcomes are subsequently derived from this culture.

In this chapter it has been further established that children with a low sense of belonging and children who are socially remote often respond differently to the physical school environment, indicating greater affiliation with purely aesthetic or functional features, like the School A chimney for example. This appears to be a form of refuge from the more socially and culturally associated aspects of the physical environment.

Allied to this is the finding that socially less popular boys identify more with the hall, for example, than other more popular boys offering regulated and less intense social interaction and less exposure in the sense of academic ability. The classroom, on the other hand, is usually laid out based upon children's ability and judgment in this public arena seems to be the basis for socially exclusive behaviours. More generally, the studies further reveal that public groupings in the pursuit of organisation can fundamentally affect and undermine well-being. In this respect one might consider that the pure personalisation of education is a good thing because in theory public grouping will not exist in the same way. Perhaps this indicates one reason for the children's attraction to technology which this chapter has pointed towards.

However, as a consequence, the evaluation of traditional practice and features of the primary school offers an alternative perspective on inclusion and individualisation of school. It has emerged that many children place great importance on staying safe and feeling secure and it is easy to forget that childhood can be a harsh and physical existence. As a consequence, clearly defined rules and closeness to caring adults have been shown to be welcomed by many children and repeatedly point towards the importance of the children's relationship with their teacher. How would these children respond in physically and socially freer environments in which behaviour is redefined and girls' territorial behaviour expressed in the playground begins to be expressed in the learning space, for example? These studies have identified this space to be the locus of well-being and presently do not appear to be the setting for social territory, or ownership.

Referring back to the experiences of open plan, teachers described spending much less time with the children as they pursued their studies independently (Galton et al., 1980). This, on the basis of the findings presented in this thesis, is a significant factor in the failing of open plan and, as schools take on more of the family role, must be a central concern for personalised learning. Perhaps the children have been conditioned into this type of culture but certainly these studies indicate that this relationship is more not less significant by the latter stages of primary school. From a design perspective this would appear to be a central purpose of school architecture.

The chapter also indicates the importance of community in the study schools and recognises attempts to create environments which engineer social interaction or which exude communal significance to influence feelings of identity and inclusion. Despite the contention of well-being model that these efforts are likely to be contrived and have little positive effect on well-being, girls do seem to respond favourably to them; the naming of the friendship bench for example may recognise the potential for girls' excluding actions in relation to playground furniture and represent an overlaying of teachers' wisdom to curtail this natural phenomenon. However, whether expressed through furniture or community symbols, there is equally a risk to some boys' of reinforcing their sense of isolation. A further example of gender differences when considering the design and culture of schools.

Despite differences in their local communities, their visible social characters and their physical environments, the findings at both schools appear to indicate common aspects of primary Education and therefore common challenges to cultural and physical change. Chapter 7 will discuss the role of design in supporting the enrichment of the child-teacher relationship.

Chapter 7: Discussion - What this means for primary school design

The aim of this thesis has been to investigate how children's relationships with their physical school environment explored in a social and cultural context can suggest an alternative approach to primary school architecture and furniture. In this chapter I will discuss the implications of the research undertaken in this thesis in the light of possible cultural and physical change in primary schools, with particular consideration given to the central child-teacher relationship. Conclusions will be presented as specific recommendations for the enhancement of the design brief for new and refurbished schools which reflect child-teacher centred design principles.

7.1 Introduction

As a nation we are currently building a significant number of new schools upon which, in accordance with many observers, Heppell et al. (2004) comment, 'This is welcome news if we are building the right schools, but an accelerating crisis if we are not (p.2).'

In the introduction to this thesis I described the ambiguous setting in which the new school building programmes in England and Wales have been initiated. The new or refurbished schools, it is hoped, will transform mainstream state Education in England and Wales and yet, as this thesis has outlined, there is uncertainty about what transformation means in schools, how it can be realised, and the role design can play.

Identifying this to be an issue at the design briefing stage, I highlighted early in the thesis a consequent design culture which is narrowly focused on individuals' achievement, concentrates mainly on architecture, and largely distances itself from school culture. It is this school culture, however, which would appear to sustain school environments 'representative of our past, not our future (BCSE, 2007, p.5).'

Therefore I have taken a step backwards from design to consider children in their existing primary school settings. Research has been directed towards both the playground and the pencil, as two examples, and has reflected the perspectives of the children in the study schools by treating the physical, social and cultural environment as a unified experience.

As a result, the studies in two contrasting primary schools reveal tensions and contradictions in what schools are being asked to achieve and how design is conceived to support these objectives. In 2004 Blair established the central school design objective to be the development of the 'talents

of each individual young person to the fullest extent (para. 5).’ However, at a philosophical level and applying the logic of the well-being model developed in Chapter 1, directing design towards the individual’s learning can be seen to ignore the overriding socialisation role of schools in which concerns of citizenship prevail. Moreover, on a day-to-day level which the well-being model determines should be the predominant concern of more affective design, the management of large numbers of children produces schools which are arguably concentrated on the organisation of learning rather than on learning per se.

The impact of this oversight, evident in the historical development of school design presented in Chapter 2, is manifested in static, physically and socially restrictive settings whose principles of use have largely endured from the Victorian Board school era. An accord between school practice and the physical setting can be seen to define acceptable behaviour in physically and socially limiting terms. While Chapter 1 noted the perceived importance of producing creative individuals, instead the belonging studies in Chapter 5 indicate that currently, by the time children reach secondary school age, their perspectives have narrowed and their imaginations are threatened by the incumbent logic of school organisation.

Despite the objectives of the Primary Capital Programme, this I suggest is the reality of mainstream Education in which over 4 million primary school children require compulsory education in England alone (CILT, 2009); in order to step forwards Design must therefore avoid operating within an aspirational vacuum to appropriately understand and challenge school culture within its mainstream context.

7.2 Expectations of Design

Chapter 1 discussed design briefs which demand schools to be inclusive, to improve self-esteem, and to promote identity. Furthermore, as the Education and Inspections Act of 2006 now places the responsibility for a child’s well-being with the school, White (2005) rightfully demands a better understanding of well-being and its constituents. I have addressed this in the development of the well-being model illustrated below in Figure 7-1.

The model has drawn from a number of sources and disciplines throughout the thesis to interpret the complexity of well-being. Its purpose has been to inform a realistic expectation of design and provide a means of evaluating the possibility of effecting cultural change, if not transformation, described later in Section 7.5. As such it is primarily indicative and is not presented as an exhaustive model; its limitations are described in Section 7.6.2.

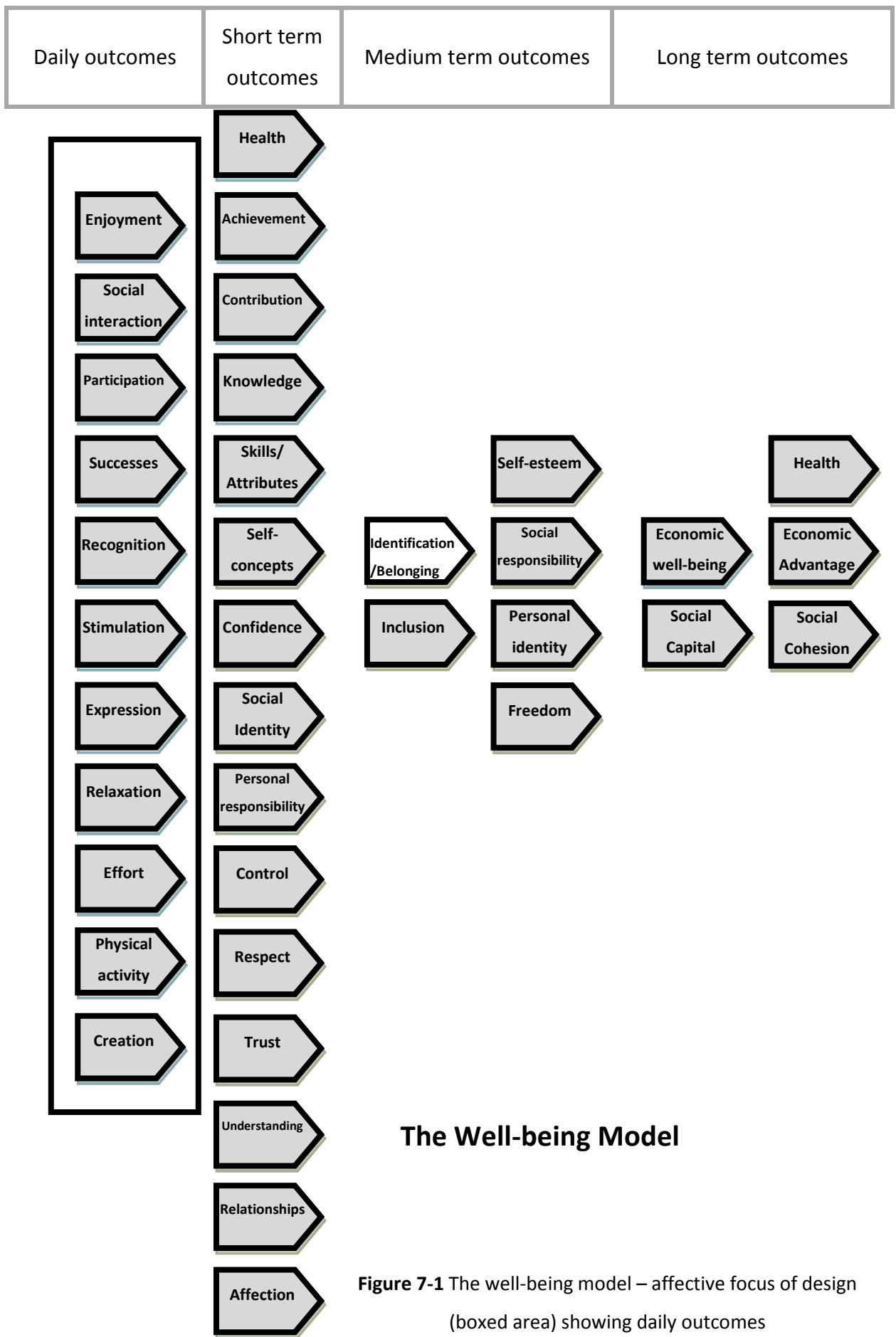


Figure 7-1 The well-being model – affective focus of design
(boxed area) showing daily outcomes

Presenting the model, Figure 7-1 illustrates elements of the *daily* experience of a child (shown in the boxed area) and depicts the progression of such experience to short, medium and long term outcomes. These will naturally vary in their positivity. Evident in the figure is also the treatment of the longer term outcomes as considerations of well-being beyond the individual at a community, national and even global level.

Central to the well-being model, and therefore central to the evolution of this thesis, is the concept of *belonging* shown in white which Chapter 4 introduced as an indicator of established positive short and medium term outcomes. Simply, this sense of belonging can be understood as a fulcrum from which longer term outcomes are initiated.

The well-being model has informed and directed the research presented in this thesis by eliciting five guiding principles relating to the pursuit of well-being relevant to the design of the school's physical environment:

1. There are basics of design, such as air quality and safety, which are fundamental and must precede more affective design efforts (Appendix 3);
2. Affective design should focus on day-to-day outcomes and not longer term aspirations; in general these are socially derived concerns;
3. Achievement is one aspect of the well-being model and part of a much larger and more complex entity. Achievement should not therefore be regarded as an isolated goal;
4. Well-being is highly subjective; Chapters 1 and 2 explained how society's expectations and school culture direct the possibilities of children's well-being towards desired outcomes;
5. Belonging, a development of the well-being model following initial primary research, presents a research measure with which to gauge the possibilities of children's well-being with respect to longer term outcomes.

By illustrating in Chapter 1 that influencing longer term outcomes is problematical, the model vindicates the doubt expressed in the introduction to this thesis when I considered whether furniture I had designed could possibly promote children's creativity. More generally in school design, I have recognised efforts to influence longer term outcomes as tending to divert attention towards aesthetics and the objective of inspiration. This was evidenced in the discussion of current trends presented in Chapter 2 in which the reality of school design is fundamentally different from the uninformed expectations and narrow focus of the design brief. Figure 7-2

reinforces this point by comparing a proposed *classroom of the future* with a school of the 1970s; I advise a lack of innovation and lack of awareness of design beyond architecture combines with the aesthetic, outward-facing focus of the currently emerging school architecture.

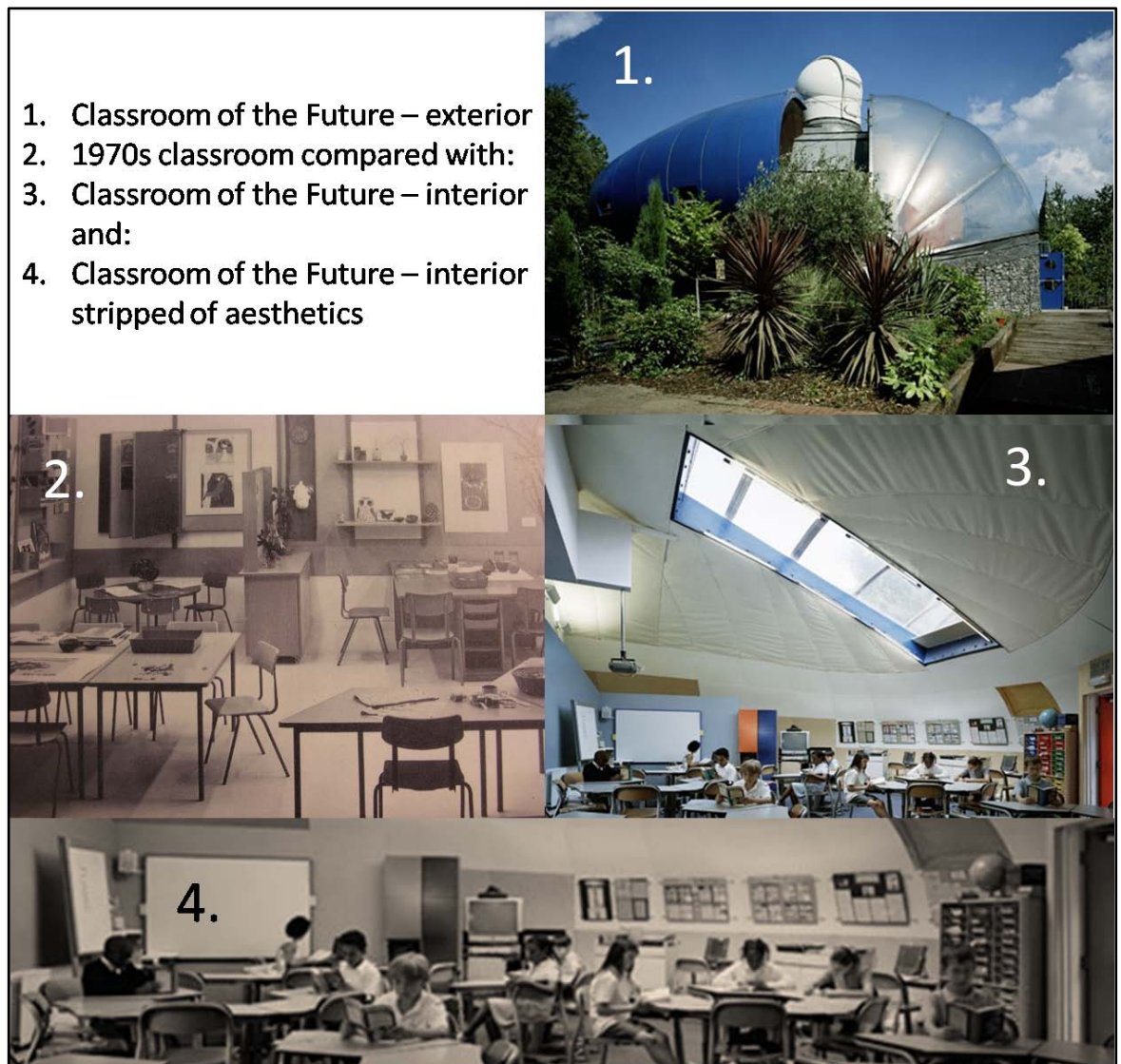


Figure 7-2 Classroom of the Future? Comparison with 1970s' design. Photograph. Source: 1,3 & 4 - Studio E; 2 - Saint (1987)

In Chapter 2 I further proposed that 'inspiration' and concerns of the building's environmental performance are superseding the quality of children's daily experience at school. Within this debate, I argued that most of these efforts to inspire through aesthetics will be lost through age and familiarity as what might be called the wooden-clad era of school design is established; the transformation of Education will not be achieved through aesthetics.

The model is intended as a largely objective representation of well-being yet, beyond adding realism by narrowing the expectation of design to daily outcomes, it is difficult to determine a meaningful contribution without exploring the subjective nature of such outcomes.

The difficulty found in applying an objective model to schools is present in the debate about what child-centred Education actually is. This concept, embracing well-being, was described in Chapter 2 as evolving slowly over many years and, despite limited examples of schools which are regarded as child-centred, its affective objectives continue to be reflected in expectations of Design in the development new schools.

The *Good Day Bad Day* study in Chapter 3 revealed how the day-to-day possibilities of well-being are subject to judgments made on behalf of the child concerning what is considered right for that child and what the school is expected to deliver; good test results for example. Having rejected Rousseau's (2004) socially and culturally isolated view of childhood in Chapter 1, the alternative subjective perspective tends to render the *child-centred school* as a nonsensical term. Put simply, a parent of a child in School A may believe it is best for their child to do homework every evening whereas a parent in School S may believe it is best for their child to be playing with friends. Despite implications for social mobility, both parents may well be right, illustrating the term *child-centred* to be irreconcilable beyond UNICEF's (2004) assertion that schools should act in the best interests of the child. This particular discussion will be developed further with respect to the physical school in Section 7.4.2 in which a child-teacher centred school is discussed as a more practical and meaningful objective.

Primary schools can be seen to define the possibilities of a child's well-being and despite local differences many aspects of children's daily experience at school have proved common across both study schools, based on a common character of children and of Primary Education. The belonging studies showed that as children progress through primary school they become socially more discriminating and their relationships with peers become more intense; they indicate the importance of the teacher, of gender, of friends, of behaviour, of ability groups and, particularly at School A, the recognition and reward of achievement. Furthermore, Year 1 and 2 children in both schools more regularly described the display of rules negatively whereas older children would more consistently describe them as 'something to follow.' The primary research presented in this thesis supports the argument that children will generally conform to the culture in which judgments concerning their best interests are made and Chapter 3 observed that many of these values can be traced to the communities in which the schools are located.

I have pinpointed the physical and social nature of childhood and in Chapter 2 I refer to Kytä's (2006) discussion about children's natural propensity for play and investigation, supporting Piaget's (1975) assertions. However, returning to the original intention of this thesis, I found scarce research which considers this in terms of the physical, social and cultural context of their schools. It is notable that direct references children made to the physical setting with respect to their well-being were limited. Apart from stickers or trophies which Chapter 3 described as becoming culturally charged, studies in both schools pointed towards a relationship with the physical school which is generally negotiated through the social and cultural associations children have with aspects of the setting.

Sections 7.3 and 7.4 present a discussion of the exploration of the child's voice in preceding chapters and what this has revealed about this relationship both socially and culturally, leading to an examination of the implications for Design's meaningful contribution set out in Section 7.5.

7.3 Social influences on children's use of the physical school

7.3.1 Children's exertion of territory

Immediately apparent in School S, and in later primary research in School A, was evidence supporting the model's contention that children's social interaction strongly influences their well-being. Nevertheless the primary research also illustrates that play, as it typically manifests itself, will not always represent a positive contribution to how a child feels. Findings point towards an often inadvertent relationship between the school setting and the child, in which use is significantly different from design intent and children can be seen to adapt purely functional, inanimate objects and aspects of architecture for the purposes of play. At various points in the research children referred to manhole covers and steps as contributory to their social activity, for example. However, these settings were noted throughout as providing the location for territorial social behaviour, indicating that the physical environment can be seen as a mechanism for creation and play but also of discrimination and the establishment of social hierarchies.

Throughout the thesis I have shown that children identify most with aspects of the physical school they are physically in touch with, emphasising the experiential nature of children's relationships with the setting and underlining the importance of embracing the range of children's senses through design. Despite the historical dominance of architecture in school design, when children were asked specifically about their school environment in the *Take it or Leave it* study it was clear that, at a conscious level at least, children were less inclined towards architecture than they were towards objects (boys) or outdoor furniture (girls). I subsequently revealed in Chapter 6 girls'

strong identification with outdoor furniture in which the positivity of their responses generally mirrored their popularity with peers, reinforcing the connection with territory and social hierarchies.

The *Take it or Leave It* study further disclosed how different benches were preferred by different ages and it appears that these territories are inherited as children move up through the school. In School A, the *friendship bench* was the apparent territory of the oldest children in which social importance clearly took precedence over materials or style. Additionally, from a design perspective, there is observational evidence to suggest that, where a traditional bench style was used, the capacity of the seating and its clearly marked boundaries can contribute to discrimination by communicating who is on the bench and who is not. On the other hand a less defined design could merely encourage more ruthless exertion of discrimination in the absence of an expedient physical constraint to the furniture.

7.3.2 The difference between learning spaces and social spaces: A perspective on architecture

The preceding section specifically relates to the playground and throughout the thesis the relationship children have with outdoor furniture and architecture has been found to be very different from their relationship with the classroom. Of 100 children in School A, not one child indicated a favourite classroom chair which they would like to take with them to their new school, even if this chair was effectively 'owned' by them for a year. In fact classroom furniture would appear to be devoid of any personal significance to the children.

The contrast highlights the demarcation between traditional social spaces, like the playground, and learning spaces, like the classroom, and how this demarcation affects children's relationship with the physical school and their well-being. This, it was claimed in Chapter 2, is a legacy of Robson's (1877) Board school design.

Throughout, studies have shown that the physical and social interaction characteristic of the playground results in unprompted creation, for example, yet this is not replicated in the formal learning environments where it is now actively sought. Furthermore, it is evident from the research presented in Chapter 5 that children's well-being, rather than being derived from the places supporting play, expression and stimulation as the 'objective' well-being model proposes, clearly begins in the classroom. Putting children's relationships with adults aside, this demonstrates the cultural steering of well-being described later in Section 7.4.

Additionally, despite its limited social and physical possibilities, a number of children in the *Favourite Place or Feature* study identified the classroom as their favourite place, noting that they feel safe, whilst also mentioning the presence of the teacher as a factor. Therefore while girls' expressions of favourite places or things overall were notably concentrated on outdoor features supporting social needs, other girls identifying the classroom were often citing social refuge from such expression, as Melanie's drawing in Figure 7-3 reinforces.

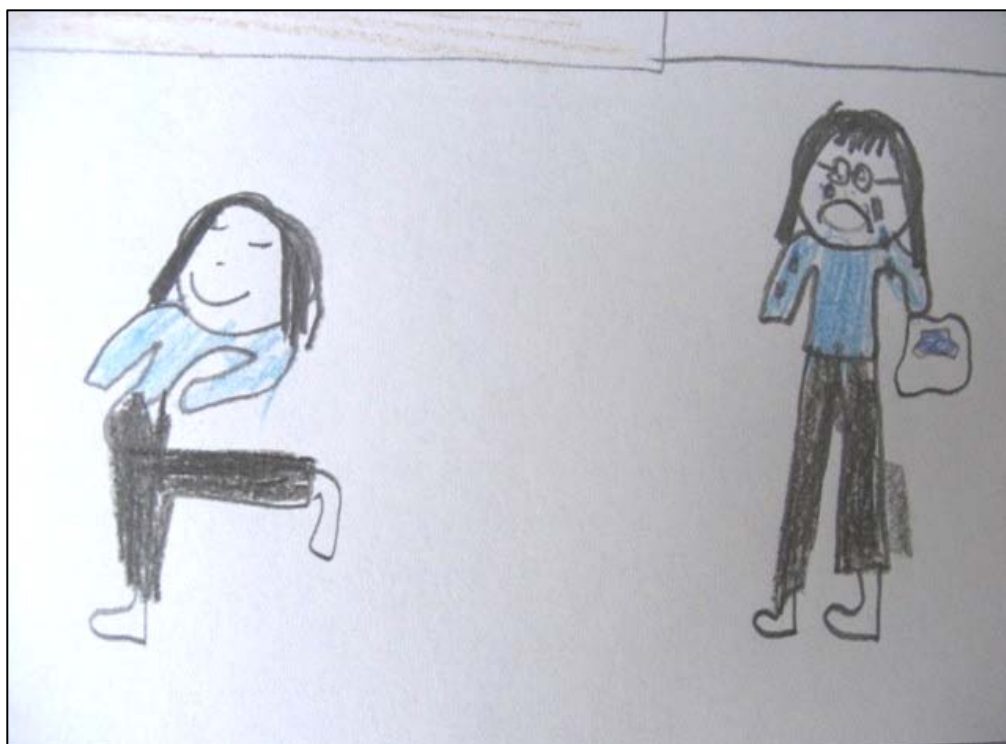


Figure 7-3 Unhappiness in the playground - School A

Moreover, from the perspective of territory, although classrooms were only occasionally labelled with the teacher's name, children still generally referred to the classrooms as Mrs Walker's or Mr Arnold's for example illustrating beliefs of ownership. The general sense that the classroom is above all the teacher's is reinforced by the visible tradition that, as children move up through the school, the teachers generally remain in the same rooms. Consistent with this is the conclusion in Chapter 6 that the classroom is generally not regarded as an environment in which social territory is exerted or more freely derived social behaviour expressed. Instead, children in classrooms were observed to become more focused on personal territories like desk space, coat hooks and drawers; the limited analysis of the coat hook in Chapter 6 finds that personal territory may appeal to girls with a low sense of belonging compared with social territory, like the crocodile step, appealing to girls of high belonging.

While the well-being model proffers that generally children's learning can benefit from reflecting their social nature, as put forward in Chapter 2, allowing territorial behaviour beyond personal territories appears to have been resisted in formal learning environments. These two facets of space were revealed to be contradictory in the current primary school context and represent a tension between less containing learning environments and inclusion. As discussed previously, both Max-Neef et al. (1989) and Maslow (1943) claimed that some human needs are more fundamental than others and the research reported in this thesis has shown that some children will revert to basics relating to safety and refuge in preference to freer social interaction. Overall, this illustrates the difference in the manifestation of well-being for different children; manifestation which the belonging studies highlighted is also based on reactive responses, most notably in School S, based on evident social groupings like age and gender.

As this thesis progressed to seek more subconscious evidence from children, architecture's important role of creating spaces for human interaction in schools emerged. Indeed, later findings related to inclusion suggest the contribution of architecture to represent a more subliminal and protective design discipline, in line with the contentions of Rasmussen (1964) and Pevsner (1991) noted at various points in the thesis.

Perhaps, therefore, instead of advising that architecture has failed over many years to challenge the form of schools, it can be argued that the architecture of the Victorian Board Schools matched the school culture and needs of the community over and above the individual child so closely that it has defied change. Teachers have reverted to this form ever since which feasibly indicates the strength of architecture and not its shortcomings; Section 7.4 develops this further by discussing the classroom as the locus of children's well-being.

Reflecting on this reversion by teachers, a certain folklore or accumulated wisdom was also evident in schools in which, for example, teachers understood the disruptive effect of too much of the colour red, or of windy days, on children's behaviour, as Chapter 5 discussed. On this basis, the return to traditional forms in school can be treated as evidence of teachers' understanding of inclusion and of the importance of safety and security as predictors of learning. The naming of the friendship bench in School A to mediate territorial behaviour is perhaps another example of intuitive teachers' maintenance of cohesion in a school community.

Moreover and most notably at School A, girls show an increased identification with inanimate functional features as their school belonging declines, including the chimney at School A for example. Once again this mostly indicates a relative shift away from the more social aspects of

school like the crocodile step and continues to emphasise the subliminal role of architecture. Social anonymity also appears to be a motivation for boys' relatively more positive identification with the school hall, a very traditional feature of school. These spaces are generally represented by a high degree of adult control and therefore contrast with open plan spaces intended to promote investigative, child-led activity, discussed in Chapter 2.

Beyond the role of architecture and furniture children also indicated how they relate to objects which support learning such as books and the computer keyboard but equally which also appear to provide some form of refuge. Paradoxically children could be seen to use books and technology as an escape from learning although technology, such as the computer, was also identified with strongly by those indicating high academic self-concepts, as Chapter 6 revealed. All of these examples confirm that children's social experiences at school have a great bearing on how they use the physical school and its relationship with their own learning, in which some treat learning and its environment as a sanctuary.

As an adjunct to this discussion I recognised in Chapter 2 that current endeavours to *blur* the distinction between learning and social spaces in schools certainly acknowledge the advantages of more social, informal learning. However, the subsequent studies show that this may well be to the detriment of other children's senses of well-being if it results in discriminatory social learning behaviour. The second observation made in Chapter 2 further noted the tendency to apply informal learning to children's social spaces whilst leaving the classroom intact. By identifying the locus of children's well-being to be the classroom, the belonging studies highlight this as an uninformed approach and a misdirected opportunity which invites criticism of appropriation.

7.3.3 Concerns of community

Although I have argued through the well-being model that design should avoid trying to directly influence longer term well-being outcomes, Chapter 6 indicates that the use of symbolism to promote identity and community can be effective. Children's responses at both schools to symbols like school logos and badges were on the whole positive and the School S Hands and the School A friendship bench offered unexpected examples of how such symbolism can galvanise belonging rather than merely reflect it, as the model originally projected.

Girls in particular are most favourable to the communication of identity and community which Chapter 6 attributes to the exposure of the logic of the well-being model to the peculiar results of Tajfel & Turner (1979). Here the irrationality of an individual's positive identification with the group they feel they belong to was revealed and can be seen as a heightened response to

relevant symbolic features of school. The discriminating social behaviour indicated in this thesis also exposes a natural allegiance to *in-groups* affecting how children perceive their physical school environment; as Sally at School S reports, 'because of the paint we play games that other schools can't.'

In comparison to the School S Hands, for example, the friendship bench was a more subtle attempt to engineer inclusion and social responsibility, and suggested that such design intentions are more dependent on a foundation for well-being already existing at the school. In other words, in this case, there are no short cuts to well-being and the symbolic nature of the friendship bench at School A, it has been revealed, may exacerbate feelings of exclusion rather than assuage them. In both cases boys are less responsive to symbolism in the school environment and it was only more disaffected boys who responded to representations of communal achievement like wall displays; relevantly these were noted as free from messages of competition and winning.

7.3.4 Review

In summary, studies in both schools pointed towards a relationship with the physical school which is generally negotiated through the social context of the child. In particular this has been shown to affect children's relationships with their learning.

Overall, the most notable finding is the relationship girls have with the social school which on the one hand can be seen to positively galvanise the school community whilst on the other indicates exertion of territorial behaviour and social discrimination. If design is to target the locus of well-being, the classroom, by reflecting children's social learning more closely, this must be considered in the context of inclusion and of other children who take refuge from this. Architecture's protective role in schools is a significant consideration in this respect.

7.4 Cultural influences on children's use of the physical school

Although I noted in Chapter 1 that, by nature, the literature on personalised learning largely prioritises concerns of developing the individual in Education, I subsequently recognised that the Government's *five outcomes* and Gilbert's (2006) references to participation betray the wider obligations of schools to develop the child in the context of citizenship. Considering the child independently of the society in which they are growing up is fundamentally flawed and Rousseau (2004), though influential, has proposed a limited, romantic view of childhood. As Arthur (2003, p.69) determined, 'we are not as self-determining or as autonomous as we would like to believe.'

The well-being model represents this reality; as well-being is expressed at a community or a national level, described in Chapter 1, the child is evidently subject to established wisdom, cultural norms and also popular views on what constitutes citizenship. In other words children, and their well-being, are being directed towards what is conceived to be a useful contribution to society and the economy.

Thus I have described in the first chapters of this thesis how a child-centred school, in practice, only engages with the individual child once broader cultural expectations and policy have defined what is good for that child. Viewed positively this respects that a child's well-being will be greatly influenced by their ability to operate successfully in society. More negatively, Education can be seen to be manipulated by policy dependent on changing political and economic movements in which more ephemeral interests direct the curriculum.

In particular I observed Craft's (2005) contention that the pursuit of creativity may be one such example, highlighting how policy, influenced by the economy, directs schools and their curriculum to consequently determine the possibilities of a child's well-being. Criticisms levelled at Education, like those of Greany (2005), condemning the treatment of children as a homogenous group and the supporting physical setting, have energised the pursuit of personalised learning through design. However, paradoxically, personalised learning and creativity still determine a narrow view of well-being in which it is expedient to consider children as individuals but in reality they remain a homogenous group at the will of the economy.

Nonetheless, despite the economy and the expectation that schools will increasingly take on the traditional family's socialising role, Chapter 2 concluded that the pressing issues schools face relating to children's well-being do not sit within a philosophical debate. The true narrowing of well-being, observed in the teachers' responses to the open air and open plan schools discussed in Chapter 2, predominantly relates to the daily practicalities of organising large numbers of

children. Beyond control, the concentration on organisation is perceived as saving a great deal of time and Dean (2008) contends that it is in everyone's interest to minimise such time.

Nevertheless, in this way schools arguably become concentrated on the organisation of learning as opposed to learning itself which the belonging studies have linked more to definitions of acceptable behaviour than to achievement.

The research undertaken in this thesis reveals that the physical environment has been complicit in this culture, either by design or by use. Observation in the study schools indicates clear demarcation of space in which expected activities are prescribed. I have illustrated that the closed architecture of the classroom which essentially contains children is compounded by furniture which then restricts movement even further. Moreover, objects like teddy bears and stickers in School A give value to the behaviours the setting prescribes and the communicative environment, which was most evidently used in School S, reinforces this further. This is illustrated in Figure 7-4.



Figure 7-4 A sophisticated physical environment in support of school organisation. Photograph.
Source: Author

Relevantly, unprompted, children in School A were most likely to refer positively to elements of the physical school which relate to reward; in this way Chapter 3 revealed how objects can become culturally charged and children's well-being can be steered away from social concerns, for example. Typically these are objects which are favourably associated with childhood, like teddy bears, and which are appropriated for developing, or conditioning, the child. In addition, objects which are seen to be of sporting significance like trophies and cups are also used in this way, particularly with older children. Chapter 3 questioned the validity of such an approach in respect to its effect on children's pleasure in learning for its own sake. By comparison, unprompted, School S children talked about social spaces.

Historical reversions to a classroom architecture discussed in Chapter 2 demonstrate how use has continually resisted change. Equally, I have described the efforts of post-War furniture designers

to provide environments which can be moved around by children as yielding to a culture which prefers the environment to be static. Bearing in mind the defining, behaviourally prescriptive design of the school chair discussed in response to the belonging studies, it is revealing that, despite a seemingly major cultural shift away from the fixed benches of the Board schools, the resultant setting for learning is potentially more restrictive. In fact I have identified, perhaps provocatively, the only true beneficiaries to be the school cleaners; chairs were observed to be stacked at night and returned to exactly the same locations each morning. Moreover, Chapter 2 exposed current developments in secondary school chair design to be more, not less, prescriptive and physically constraining.

The possibilities of the environment can also be seen to be denied by the overlaying of rules. The classroom and its layout naturally engender routine and understood and acceptable patterns of activity which mean that these rules can be clearly defined based on the physical setting, such as no rocking on the chairs or running in the corridors. However, not only are these environments static, they are, as observed in the literature and the study schools, typically one-dimensional, lending themselves to an organisation in which areas are often arbitrarily prescribed for creativity or writing, for example. I offer that such practice does not reflect an understanding of children's learning; rather it is compartmentalising of children and risks, as the belonging studies found, negative associations arising between the child and the activity. This, Chapter 5 suggests, has a knock-on effect to self-concept.

In practice, therefore, the thesis has identified current school furniture as little more than an extension of the architecture and its use defined by the same rules and routine. The school's influence over architecture has been contested to be relatively limited and although theoretically furniture presents a much more flexible resource, its contribution is purely found in supporting the movement of individuals between fixed, known areas which are often then labelled to define activity. As part of the discussion in Chapter 2 I further described the fundamental cultural assumption that each child should have their own chair and desk place despite teacher's own conscious and contrasting observations of use. This highlights an unchallenged acceptance of the environment and a lack of unawareness of its possibilities.

What I have inferred from this, supported by the behavioural focus of the findings of the belonging studies, is that in a primary school setting behaviour is largely defined physically and supported by rules which are often prescribed by the environment and upheld by the teacher. While primary schools may therefore limit the social nature of girls, in both study schools the teachers' perceptions of children who behave poorly strongly imply that physical concerns of the

environment mostly affect boys and their feelings of well-being. Indicative of possible subsequent disaffection with school is the finding that boys' generally relate less well to the communication of rules, exacerbated by an evident dependence on how they are perceived by the teacher. I noted boys' lower success rates in Education, discussed in Chapter 5, as related in some way to such early disaffection.

This can be seen in boys' interaction with the physical school. The belonging studies have shown that boys typically find expression and perhaps motivation for their low belonging in aspects of the material school which have rules applied to them. Afforded by the detail of the *Identity Card* study, such boys could also be seen to use appropriate parts of the school as an outlet for their rebellious urges. While this was evident in both schools, boys' reactions to rules can be seen explicitly in the behaviour encouraged by the gate release at School A which many children associated with being trapped or not trusted.

Furthermore, in Chapter 6, the School S boys' responses to 'a wall that you can't climb' and the hall rafters from which ropes no longer hang are indicative of frustrated opportunities for physical expression. This can also be witnessed in school corridors which invite the child to run but the rules applied to the space make it unacceptable to do so. It is conceivable therefore that acceptable behaviour is often defined on the basis of physicality which the design may encourage yet the school disallows, as the latter chapters of this thesis expose. In general I observe that it is easier to enforce rules based upon physicality rather than the subtleties of territorial play.

Nonetheless I would be loathe to restrict this contention to boys alone, particularly having observed the intensely social and physical nature which generally characterised the School S Year 5 class, irrespective of gender. I have noted in Chapter 5 that Steer (2009) points out changing patterns of gender behaviour which determine that this is increasingly relevant to all children. Furthermore the physically restrictive school environment affects everyone on the basis that co-educational school environments and their practice do not generally differentiate by gender.

7.4.1 Behaviour and achievement

The findings, relevant to both Education and Design, have much wider ramifications, as Chapter 5 discussed. Behaviour, while it might not determine the curriculum, will largely determine the success of it. For example, creativity may be an important element of the curriculum yet, if behaviour is defined to preclude aspects of physical and social expression, then the promotion of creativity is limited. Referring back to the well-being model this relates to trying to achieve an

outcome in the future without focusing on the child's day-to-day needs and can result in a processed, superficial approach to creativity rather than creativity itself.

These are fundamental implications of the belonging studies at School A and School S in which, combined with the discussion in Chapter 2, lead to the conclusion that, for school organisation to work, acceptable behaviour and what is considered to be achievement must be aligned. Child-led, investigative learning, which also underpins current notions of personalised learning, was emphatically overridden by teachers during the open plan era because, to a large extent, what was considered achievement was at odds with how behaviour was conceived. Achievement intruded on behaviour in a way that teaching the 3Rs to children in rows on bolted down benches did not. The teaching of the 3 Rs was a limited sensory experience for children and the Board schools were physically organised to support or, perhaps, condition children to watch and listen, as I discussed in Chapter 2. Also in Chapter 2 I reported how Plowden (1967) formally recognised the work of Piaget (1975) and others to maintain that a child's learning should be multi-sensory in nature, yet the reversion to the more static classroom format is evidence of teachers redressing the behaviour-achievement balance. While self-directed learning involves movement and the range of senses it continues to be restricted by school culture and organisation.

As a result I note that Design and Education have continually been frustrated in their attempts to pursue child-centred schools for over a century and the channelling of design efforts towards personalised learning has been exposed, not as a new solution, but instead as a reformatted addition to protracted and unfulfilled ambitions for schools. While the basic protective design qualities of the classroom may absolve architecture, the thesis reveals that the unchallenged, static and ubiquitous chair and desk represent a fundamental oversight in school design which perpetuates culture and curriculum.

7.4.2 Dependence on the teacher: Belonging and inclusion

The studies, in accordance with the diversity of the well-being model, have demonstrated that it is problematical to try to evaluate inclusion purely in terms of social popularity and belonging does not uniformly increase the more popular the child is; in fact exceptionally high belonging found for some children in the outer social circles of the social network analysis indicate that certain children appear to be immune to their social standing. While the youngest children illustrate a clearer link between social position and belonging, by the time children reach the latter years of primary school, there are other factors involved.

Notably I have shown in Chapter 5 that belonging is much more closely related to what the teacher thinks of a child, revealing a decisive connection between the teacher's perception of a child and that child's well-being. In addition the perceptions of the teacher are linked to children's social relationships with their peers; as Timothy said, he made 'new friends because he did well in th(e) lessons'; in this case the motivation, recognition and impact of achievement are all social, reinforcing the need to view achievement in this wider context.

Exclusion may be a natural phenomenon of children's social development reflected in the increasingly discriminatory nature of the class social circles exposed by social network analysis in Chapter 5. Nonetheless, in the same chapter I have shown the school culture to provide much of the basis upon which discrimination occurs; the culture defines what is good and what is bad and children who do not fit into these parameters of acceptability, the belonging studies show, experience varying degrees of exclusion. As an example the social importance of not being in the lowest ability group represents how public judgments made in the classroom affect the child's interaction with other children. Consequently, overall I have found that school well-being is predominantly derived in the classroom and acted out in the playground, whereby values used in schools to direct children's development can then be applied by the children for discriminatory social behaviour. The judgments, and therefore the perceptions, of the teacher become central.

Additionally, observations made in Chapter 5 identify that the effect of ability grouping on well-being relates directly to the physical layout of classrooms. On the whole children were resilient to perceptions of their ability, including girls for whom it appears to be a social advantage to perceive oneself as average. However, the social formalisation of ability in ability groups was shown as injurious to well-being, typically reinforced each day by the classroom layout and signage. While Maxwell (2000) and Budden (2007) focus on concentration and communication with respect to seating layouts, the belonging studies have shown that there are more fundamental issues; how can ability grouping and the supporting physical environment be compatible with inclusion in schools? Here is a further tension with the school's contradictory objective to develop the individual to the fullest potential.

More generally, if schools seek transformation the journey of the thesis increasingly recognised that influencing the content of the child-teacher relationship, in the context of organisation demanded by mass Education, is the essence of cultural change in schools. This central relationship has been shown to be devalued by concerns of behaviour in which the learning environment has been implicated as reinforcing and even determining. Fundamentally, the level of prescription of movement in the environment precludes physical and social activity and the

engagement of the senses, noted in the well-being model as fundamentals. In line with Mortimore et al. (1994), Chapter 5 proposed that this shapes teachers' interaction with children.

In less prescriptive environments described in Chapter 5, I have provided evidence of teachers who feel a sense of liberation from the culture which is embedded in the physical setting and who were explicit about the positive effect it had on 'poorly' behaved children. The learning island experiment which tested children's and teachers' responses to less prescriptive furniture supported the prediction; teachers noted that children perceived to have behavioural difficulties worked very well on the island, observing also that children preferred to be at a lower level; an unexpected outcome. Phrases like 'it has been lovely watching the children's attitudes change,' are suggestive of, more significantly, a change in the teacher's perception of certain children and moreover of their associated relief. Such findings form the basis of the argument that a child-teacher centred school is a more meaningful and tangible focus than the irreconcilable pursuit of child-centred ideals.

Further, there is an overlap between the implications of these findings and, particularly, the kinaesthetic aspects of learning styles work, such as that of Dunn & Dunn (1993) and Gardner (1993) noted in Chapter 5. However, rather than categorising children in what Miliband (2007) describes as a reductive approach, this thesis recognises that to varying degrees children will generally need to express their physicality and social nature as the well-being model implies. By concentrating on natural yet denied needs rather than becoming embroiled in transient conceptions of learning and curriculum, I have suggested a designer can better support longevity of design. It also avoids the further prescription of learning environments found in the proposals of Dunn & Dunn (1993) which arguably become inherited again by organisationally-motivated practice.

Furthermore I have pointed out that the desired synchronicity of behaviour and achievement in schools can naturally lead to confusion between the two and, noting that ultimately behaviour takes precedence, suggest this must affect children's academic endeavours. For example the boys identifying most with the Victorian display in School A were those perceived to behave the best rather than those who were considered most able. Equally, boys' positive identification with the books in the library was also significantly linked to good behaviour and not ability. Moreover, when one considers the dependence children have demonstrated on the perceptions of the teacher, the implication of a physically prescriptive learning environment shaping these perceptions is the potential emergence of disaffection through the child's internalised

perceptions of ability. I remarked that the number bricks, for example, which made Alex 'bad', risk such disaffection with numeracy.

However, this thesis does not simply maintain that children need to be freer in the way they are allowed to learn. The research in this thesis has clearly indicated that well-being is more complex than that and traditional architectural features like the school hall and the classroom, in which strong adult control exists, appear to be favoured by least popular children or generally those exhibiting a low sense of belonging to school. Once again, in reverting to traditional forms, it can be claimed that Education intrinsically understands inclusion and has placed a greater value on the community over and above the needs and development of individuals.

7.4.3 Review

The school culture has a determining effect on children's well-being which is primarily derived in the classroom and, notably, through the child-teacher relationship. Irrespective of design outdoors or in other social spaces, the classroom must be the focus of the school's and of Design's efforts to broaden the education offered to children and increase the possibilities of their well-being.

In particular, this is a question of social and physical expression and ultimately of behaviour. For a mainstream school to operate the design must be regarded as complementary to the organisation of the school, balancing its often contradictory responsibilities to individual children and to the school community as a whole. Furthermore, children have indicated the importance of their relationship with their teacher, irrespective of school or age, and I have advised that the objective should be to revalue this relationship in what I term child-teacher centred design. Essentially this is to be found in a balance between non-prescriptive and safe, protected settings for primary school children.

Additionally cleaners' observed refusals to clean furniture which is not 'school furniture', therefore affecting children's willingness to use it, highlight the fixed culture which many teachers, parents, cleaners and caretakers reveal towards learning spaces; a further part of the cultural challenge faced by Education and Design.

7.5 Conclusion: Priorities of primary school design

This thesis has developed an understanding of the current challenges facing Education informed by the daily experiences of children. The intention has been to use this research to contribute to the process of school design by tackling the ambiguity observed today at the briefing stage. This has been achieved in two steps:

1. Defining the realistic expectation and focus of Design;
2. Exploring the subjective experience of children at school to identify specific design opportunities for supporting positive and realistic change in Primary Education.

The primary school classroom has been shown to be the decisive location in determining a child's well-being at school. Classrooms have been found to limit well-being both physically and socially, and determine many aspects of what the children do and how they feel both in and outside the formal learning environment. Above all classrooms are the location of the pivotal relationship between child and teacher.

In Chapter 1 I referred to Rudd (2008a) who determined that transformation, and in particular personalised learning, is necessarily undefined and must evolve. Combining this with my own observations of an educational context which is not suited to rapid change, I noted that cultural change requires both a starting point and access to challenge the existing culture. In this regard I propose that the classroom is the starting point and access is through the child-teacher relationship. Without undermining the importance of outdoor spaces, for example, I maintain that this is not where the real enrichment of children's education begins.

This conclusion therefore offers design **priorities** for change which specifically focus on revaluing the child-teacher relationship in the classroom setting. It is recognised that change should be viewed as incremental and not transformational, and this section culminates in the presentation of recommendations for the design brief.

7.5.1 The relationship between architecture and furniture

Although in isolation Design may be perfectly able to produce environments which are challenging and stimulating, this thesis has identified that the consideration of primary state Education as a mass concern, together with its responsibility for diverse children's needs, will determine the meaningful application of design.

The relevance of architecture has been established as providing spaces in which human interaction can occur and, in a primary school context, a simplistic view of architecture centres around the question of open or closed learning environments. Chapter 2 described how the provision of entirely open plan environments in the 1960s and 1970s represented an extreme which not only misjudged the organisational requirements of schools but, as Chapter 6 highlighted, undermined the fundamental child-teacher relationship. Moreover, the effect of freer social use of areas and features in more open learning environments has been shown by this research to challenge other inclusive motivations for the school community and the needs of certain children who seek socially anonymous spaces or adult protection.

Thus design must balance the multiple demands the school exerts on space and I note that the findings of this thesis predominantly direct architecture towards the basics of design, as described in Appendix 3, and in particular to safety and security. This reflects the significance of architecture's protective role as a subconscious factor in children's well-being, emerging from the analysis of the *Identity Card* responses. I therefore recommend that some form of enclosure of the learning environment akin to, although not necessarily identical to, the classroom is important. This does not preclude children from venturing out, of which I have previously commented Hertzberger (2008) is an advocate.

Enclosure is also supportive of school organisation and counters some of the acoustic problems which are still associated with open plan environments. These were remarked upon in Chapter 2 with particular reference to the inclusion of children with hearing difficulties.

By concentrating on design basics, the relative *closure* of architecture places the onus of a child's more physically, sensorially and socially-derived well-being on the school furniture which, currently, can also be regarded to be of closed design. In an enclosed learning setting, the view supported by the thesis findings which relates children's more affective well-being to the aspects of the physical school they are in contact is relevant.

Enabling a more social and physical character to a child's learning, less prescriptive furniture design can be seen to have the potential to broaden the possibilities of a child's well-being. While the importance of usable surfaces continues, designs which do not determine one physical position, which do not restrict movement, or which do not preclude physical contact with other children support the findings of the thesis. Figure 7-5 illustrates examples of children's natural choices in learning environments in which social and physical variety is achieved.



Figure 7-5 Unprompted physical choices in learning situations. Photograph. Source: Author

Notably the example from School B in which the setting enabled the child and teacher to interact on a basis of equality resulted in ‘a bit of a breakthrough’ with a generally ‘disinterested’ boy. Referring back to the teachers’ learning island comments about the levels at which children like to work at, it can be seen that offering variety in the physical dynamics between the child and the teacher, in this case through furniture heights, can be advantageous.

The girl working on the lit pedestal, on the other hand, is an example of prescriptive one-dimensional design yet it illustrates children’s creativity in using learning environments which afford variety. Accordingly, it is also noted that the example of the learning island is perhaps more architectural and fixed, indicating that static learning environments can still contribute if they offer variety and may actually assist when maximising the use of space. Lastly, the image of the youngest children working on the floor is perhaps the most natural and least prescriptive of learning environments and a lesson against the tendency to over-design.

Furthermore, learning spaces designed on the basis of variety and choice will automatically challenge current uniform layouts based on ability grouping, which have been shown to be socially exposing for children in the lowest groups. This does however indicate how design which tackles accepted practice can only be carried out in dialogue with the schools themselves and compromises will need to be reached as part of the design process.

As an extension to this significant dialogue, the bolted down environments of the Victorian Board schools may be regarded as more honest designs on the basis that children were not given mixed messages about their use. The wall you cannot climb is relevant here. Ensuring design integrity is a central point of discussion with the school although inevitably there will, as Chapter 2 has shown, be design intentions overridden by use.

By way of example, the cultural layering of use can be clearly seen in Figure 7-6 in the way children were allowed to use largely identical designs in different schools.



Figure 7-6 The same design intention results in different use in different schools. Photograph.
Source: Author

As discussed earlier, the enclosure of the learning environment will assist in the avoidance of undue social territories forming and being exerted in response to the less prescriptive and more social settings. There is evidence in the findings of the thesis to observe that ownership of space is not, as the exemplar design brief (DfES, 2003b) suggests, a necessarily helpful objective. I would tender that the sense of belonging which ownership promotes in some children and devalues in others is at odds with the pursuit of a cohesive school community.

Finally, as two further notes of caution, whilst it is probably natural as a designer to become enthusiastic about change and one's own innovations, Sarah at School S made it very clear when the learning island was introduced into the classroom that she just wants to sit on a normal chair. Furthermore there must also be a temptation to embrace the child's inadvertent use of design to provide bases and play areas; I would caution against intruding into this invisible world and denying aspects of a child's true creativity.

7.5.2 The design brief: Recommendations

This thesis has isolated the significant role of the design brief in determining the emerging nature of today's school design in which design resource is directed away from the experience of the child. To direct design is, rightfully, the role of the brief but in this case, an exploration of its inherent ambiguity and misuse of terminology has enabled this thesis to determine ways in which

a school design brief can be improved. The following 6 recommendations refer specifically to aspects of well-being and affective design covered by this thesis.

1. Setting out realistic expectations and objectives

The design brief, of which the exemplar brief in Appendix 1 is a leading example, has been shown in this thesis to be misleading with regard to the realistic contribution of design and the role of design in achieving more affective goals. In particular this relates to elements of the brief which direct designers to the pursuit of longer term objectives like self-esteem and inclusion, for example; the well-being model exposes this pursuit to be flawed.

This thesis therefore recommends that the terminology used avoids what might be described as unsubstantiated, aspirationally-motivated language and objectives. Instead the chosen language should reflect a discussion of the child's daily school existence and target the opportunity to enrich their social, physical and sensory experiences whilst achieving a balance with the importance many children place on safety, protection and sanctuary from socially freer environments.

2. Presenting the opportunity for meaningful change through child-teacher centred design

The brief must provide greater insight into the Primary Education context in order to establish the opportunity for change in school design and practice. The open plan venture described in Chapter 2 represented the important relationship between *design* and *use* and the dominant effect of school culture emerges throughout the research. This thesis has ascertained two pivotal features of primary school culture which have been shown to combine to greatly influence children's senses of well-being. Firstly it has determined that this culture is informed more by needs of organisation than it is by educational philosophy or pedagogy and secondly that it is embodied in the highly influential child-teacher relationship; this relationship, the research has shown, is widely valued by children and teachers alike. The failure of open plan suggests that both these features of Primary Education are actively preserved and represent overriding factors in the persistence of Victorian forms.

The two are linked and I have described how the focus on organisation creates an educational system driven by behaviour which, in turn, supported by the physical environment, can devalue the child-teacher relationship and hence children's self-concepts and feelings of well-being.

Whilst it is acknowledged that organisation is the reality of mainstream schools, it is the role of the design brief to fully describe the significance of the child-teacher relationship and the opportunity for Design to assist in revaluing it through child-teacher centred design. Additionally the research identifies the classroom as the locus of a child's well-being and therefore the critical location and starting point of positive change.

3. Establishing the contribution of architecture and furniture and setting out principles of child-teacher centred design

The relationship between architecture and furniture is unclear in today's design briefs and the design principles vague; the call for flexibility and adaptability, I suggest, speaks mostly of uncertainty and neglects the reality of schools. The overriding focus on architecture is also strongly evident and misrepresentative of this thesis' findings. Through exploration of the child-teacher relationship, this research is able to describe an important harmonisation between architecture and furniture which targets two seemingly contradictory demands on school.

The research recommends an architectural form which has been shown, in the case of architecture, to be informed by children's basic needs of safety and security, critically related to closeness to significant adults. In overall terms it is recommended that the brief advocates a balance between safe, protective classroom, or home base, architecture as the prime location of the child-teacher relationship and more varied and, in particular, less prescriptive furniture within this setting, designed to facilitate social, physical and sensory learning experiences. The objective is to revalue the child-teacher relationship by removing unnecessary behavioural messages embedded in the more traditional classroom environments. These, as the principles underpinning child-teacher centred design, it is argued can facilitate meaningful change and respect the reasons why the form of schools has proved to be so resilient to change.

4. Promoting design integrity

A secondary outcome of the research is the finding that the integrity and complementarity of *design* and *use* is an important factor in children's expressed well-being. This is exemplified by the wall which cannot be climbed or the corridor in which running is not allowed. The design brief should refer to the avoidance of designing features which either consciously or unconsciously promise certain expression, often physical, which the school culture then denies.

5. Directing a collaborative design process

By attempting to enrich the child-teacher relationship through design, its exploration demands a collaborative approach between the school and the designers. While this need is currently widely acknowledged, in practice the architect's ability to engage meaningfully with a school has been compromised by financial and time pressures and also, arguably, by a lack of focus. This thesis cannot determine budgets but it does provide a prioritised agenda in the design brief to direct the effectiveness of subsequent collaboration.

Furthermore, the research describes the important contribution of children and ways to interpret and respect children's contributions. Meaningful engagement of children is fully recommended.

6. Learning lessons from objects

In Chapter 4, Dean (2008) reflected the view of a long line of educationalists by asserting the importance of objects and the developmental benefits of handling. This research has equally confirmed the importance of objects in relation to children's well-being, supported by the finding that children identify most with things they can touch. Logically this endorses a more sensory approach to the material school.

The design and use of objects in schools, particularly in relation to learning, is a more complex undertaking and out of scope of this thesis. However, it is recommended that the design of school architecture and furniture would benefit from applying the characteristics of objects by becoming more interactive and tactile. As an example, notably as children get older and balancing previously mentioned issues of ownership, children may be encouraged to construct and deconstruct their learning setting.

7.5.3 How is this approach different from the current programme?

I have highlighted throughout this thesis that the concentration on personalised learning is too narrow a focus for Design when assessed against the broader responsibilities of schools. However, by exposing the definition of children's well-being as generally occurring in the classroom, I have similarly recommended that this location should be the focus for cultural change assisted by design. Beyond this, however, the design philosophy is different.

Firstly, Chapter 2 put forward a rather critical case that personalised learning currently takes a two-pronged approach: hand-held technology in the classroom and the appropriation of social spaces for learning. On both counts the formal learning environment generally remains

unchallenged. With the application of technology, I suggest that the physical environment has an even greater role in supporting children's physical, social and sensory learning. Equally, if the intention proves to be to deskill the role of teachers in the face of teacher shortages identified by Gould (2008) and perceived quality issues noted by Cameron (in Watt, 2010), the locus of children's well-being will become highly uncertain. By maintaining that Design must support a revaluation of the child-teacher relationship, based on the formal and anecdotal evidence of this research, I do not believe that this relationship should be lost in a digital world.

Secondly, I have stressed that architecture should continue to support the basics of design, and furniture, which the children are physically in touch with, should be the focus of more affective design. Currently, treating new schools as exercises in architecture potentially exacerbates the visual bias of children's school experience. Moreover, by refocusing the process on what happens in the building rather than the building itself, it is feasible that the recommendations of this thesis will contribute positively following any future investment cuts, as both Leftly (2009) and Sugden (2009) warn. The design principles presented in this chapter are suited to refurbishment.

Further, I recommend that design should not follow trends in Education which noticeably change as governments change, such as personalised learning and the somewhat formulaic creativity agenda. Isolating the more objective elements of the well-being model, children's timeless physical and social nature present the greatest opportunity and is likely to contribute to the longevity of schools. However, as part of the design process, there is a requirement for a meaningful discourse on the complementarity of behaviour and evolving conceptions of achievement.

Finally I recommend schools of physical variety and, arguably, character over schools which are flexible and adaptable and avoid confrontation with school culture. As Medd (1998) said, 'to design for everything is to design for nothing (p.2).'

7.6 Evaluation of the thesis

7.6.1 Contribution of the research

The contribution of this research falls under seven connected headings. These describe how innovative interpretation of literature, variety in primary research methods, and analysis have offered a necessary clarity for the ongoing collaboration between Design and Education in the pursuit of children's well-being:

1. The development of a time-based model of well-being

The model has clarified the misleading terminology used in design briefs and literature to determine a meaningful focus for Design in school architecture and furniture. Apart from some possibilities surrounding design for social identity, this focus is largely isolated to influencing positive daily outcomes and excludes longer term outcomes like self-esteem and inclusion. Thus longer term outcomes are identified as a distraction which can divert design resource away from the interests of the child. The model illustrates however that repetition of these daily outcomes can ultimately contribute to longer term outcomes which sit under the well-being umbrella yet these are dependent on culture and not design per se.

By contextualising children's achievement in a much broader debate, the model contradicts current motivations to ally school design directly to pedagogy. A greater concentration on common day-to-day social and physical needs supports longevity of design and an environment in which achievement can flourish.

2. The understanding of the nature of children's relationships with their physical school.

The application of a variety of qualitative methods in Chapters 3 and 4 has outlined the associative nature of children's relationship with the physical school which were applied with equal weighting to the pencil as they were to the roof, for example. The work highlights the significance of children's social associations in how they perceive physical environments but also indicates how this is determined by school culture, directly affecting a child's sense of well-being. This dominant form of relationship differs from current conceptions which assert the importance of Design's aesthetic qualities (the 'wow' factor) in achieving affective goals like self-esteem through 'inspiring environments'. Exploring the effect of use and influence of culture the research identifies the classroom as the focal point for change and not social spaces or outdoor learning.

3. Definition of *belonging* as a research tool

The research identifies and defines *belonging* as a pivotal concept sitting between short/medium and long term outcomes in the well-being model. Use of this measure addresses the shortcomings of both quantitative and qualitative research, described in Chapter 1, in which qualitative research has proved too general and quantitative research too specific.

4. An ethical and rigorous interpretation of the child's voice in the design of schools

The research techniques offer a deeper, more rounded interpretation of the child's voice by assessing the cultural and social environment in which this voice is heard. The research balances the respectful treatment of consciously expressed views with more subtle approaches to understand the underlying psychological environment of schools in which children live and learn. The research has identified critical aspects of social territory, behaviour and relationships.

5. Insight into the challenge of change in mainstream Education

The research methodology has sought to understand school design in its fullest philosophical, social and cultural context. From this holistic methodology the challenges of mainstream Education emerge. Despite philosophical debate, organisation is illustrated as taking precedence over pedagogy and therefore significantly defining of curriculum and well-being. Ultimately considerations of behaviour are described as underpinning and often devaluing the child-teacher relationship, which is paid scant attention in the current design debate. The call for incremental change not transformation also offers an alternative, more realistic environment for progress.

6. Explanation of the relationship between school architecture and furniture and the proposition of child-teacher centred design

Chapter 2 revealed the inherent uncertainty of this relationship. The social behaviour of children, the needs of organisation of the school and the central child-teacher relationship have been evaluated to conclude how design should now approach primary school design in which to make a step forward as opposed to transforming schools. This thesis identifies the classroom as the focus in which the protective capacity of architecture combines with varied, non-prescriptive furniture to accommodate the basic needs of children and yet to enrich the child-teacher relationship. This contradicts widespread arguments for abandoning the classroom concept.

7. A direct contribution to the design brief

Earlier in this chapter 7 ways in which the design brief can be informed and improved were presented.

7.6.2 Limitations of the research

There was a number of limitations of the research undertaken in this thesis. Firstly, the well-being model was developed to understand the limitations of the design brief. It is by no means exhaustive and while it was sufficient to inform the arguments and the subsequent research, it does not clearly differentiate between its constituents. This means that there are overlaps of terminology such as between *physical activity* and *expression*, for example, although Judge et al. (2002) consider this to be endemic in Psychology. Furthermore the elements of the model are not allocated any priority or weighting in relation to a child's well-being and are therefore assumed to be equal; this is unrealistic. Lastly the need to present the model graphically risks oversimplification and hence is open to subsequent criticism, as Maslow's (1943) pyramid found.

A second weakness is that the thesis has applied a grounded research approach in which three primary schools were engaged, one to inform the initial focus of the research and the other two to carry out a series of relatively identical studies. The relevance of the findings of the research relies partly on the premise that the findings can be generalised to other similar schools; by involving 300 children overall in the Midlands and the South of England, generalisability can only be considered partial.

A further limitation of the research is that ethnicity and disability were not considered, both of which are cited as central to school aims for inclusion. Although some evaluation was possible from the point of view of ethnicity, the number of children representing different groups was deemed too small to derive any meaningful findings.

Limitations were equally identified in the primary studies carried out as a whole class activity and those carried out on a one-to-one basis with children. Class studies were notably susceptible to influence from the teachers and other children and possibly overstated the results in Chapter 3 and 4. However, equally, the studies exposed classroom practice which encourages children to think alike; this was relevant when appraising the potential for the development of the individual child in a primary school context.

Related to this is the emergence of different methods at different schools in carrying out the investigation with children presented in Chapter 3 and 4. Krippendorff (2004) expresses concerns

about how different media can channel responses; the choice of writing at School A and drawing at School B meant that the content analysis was not carried out on an equal basis. However, once again, these choices indicated the nature of the cultural schools being investigated. Certainly, on reflection, the drawings appeared to elicit more subconscious responses, as Robinson (1994) suggests.

While the studies carried out on a one-to-one basis avoided the effect of the group, the number of children involved (104) necessarily limited the depth of enquiry with each child. For example the *Identity Cards* study which used photo elicitation to derive a measure of a child's sense of belonging to school, was restricted to approximately 20 images per child.

On the understanding that the measure of belonging would become a more accurate reflection of the child the more photographs were shown, 20 meant that the measure was liable to be influenced by complex images like the crucifix at School A or ambiguous images like the reception mirror at School S. However, the number of images also represented an appropriate amount with which to maintain the child's interest and therefore gain engaged responses. In retrospect it would have been useful for the choice of selected images to be more closely matched between the schools.

In general the studies were carried out as snapshots of children's school experiences which were susceptible to rapid change. For example, the results of the social network analysis could potentially be affected by two best friends having an argument prior to the study. More fundamentally, the approach may not adequately reflect the fluidity of children's relationships and instead unnecessarily impose an adult perspective on their society. However, discussions with staff in each school suggested an acceptable level of perceived accuracy of the results.

While the chosen methodology of the belonging studies set out to reflect the less conscious relationships between children and their school environments, the visual nature of the studies has only implied the relevance of other senses. For example, a belonging study which encouraged children to experience and touch places and objects may have produced different results which would possibly be less associative. In School B several children referred to the hardness of the school environment in informal conversations yet in School A and School S there was no mention of the feel of things despite the obvious implication that touching was important. As a result the thesis has not uncovered any significant findings relating to materials, for example.

More generally, technology has been out of scope of this research as far as it does not exist in the study schools beyond interactive whiteboards and class computers. Its relevance to children's social and physical well-being and the setting can only therefore be speculated upon.

Furthermore, the thesis has not concertedly challenged the assumption that schools should be built to last and therefore has made assessments based on Dudek's (2000) observation that new or refurbished schools are likely to be functional in 35 years' time. For this reason the thesis may understate the possibility of aesthetics in school and of the benefits of tying design to changing conceptions of pedagogy rather than culture, if a different approach were taken to PCP and BSF.

Finally, while clear patterns in responses can be shown to have directed the conclusions of this research, no statistical methods have been applied to the results. Although Cohen et al. (2000) argue that Likert scales are 'very useful devices for the researcher, as they build in a degree of sensitivity and differentiation of response whilst still generating numbers (p.253)' they later caution that 'subtle statistics require subtle data (p.255).' On this basis, the level at which the results have been analysed is probably correct although this does mean that more conclusive proofs cannot be claimed.

7.6.3 Further research

This thesis set out to inform the design brief for a new primary school with a view of how children interact with physical school environments and ensuing design principles with which to approach school architecture and furniture, and their interrelationship. Therefore, the next logical step is to develop a revised design brief and validate the findings through a design process, whether addressing the whole school or aspects of the learning environment, as this thesis has recommended. As a result of the nature of this research, perhaps the most significant challenge will be found in the cultural and organisational change in schools and therefore the briefing and design process must be a collaborative one involving Education and Design disciplines.

Possibly as part of this process further evaluation of materials and of age-relevant design within the broad principles proposed in this chapter are relevant.

By concentrating on primary schools as they currently and typically exist and operate, I have only considered technology as it appeared in the study schools and therefore further research in the light of the implications of this thesis is valid. The relationship appraised in this thesis between the physical, cultural and social school can rightfully be extended to include the virtual school, including the contribution of technology to the object culture of the school. The potential impact

of devaluing the child-teacher relationship and relocation of the locus of children's well-being is of particular interest.

The research has repeatedly referred to the benefits of objects in a child's development. This is an old tradition although it would appear to be uncoordinated in today's schools. Whether objects are an area in which prescription is valuable as Montessori and Froebel encourage or whether this also promotes a controlling culture requires balanced research of the cognitive developmental qualities of objects and their design compared with the culture they engender.

New or refurbished schools, as Dudek (2000) identifies, expect to be operative and useful in 35 years' time. The discussion in Chapter 2 determined that a shorter lifecycle may mean that architects are less constrained by concerns of changing practice in Education to collaborate more closely with pedagogy. Equally schools with shorter life expectancy may be able to achieve more through aesthetics which I have suggested is currently lost through age and familiarity. By way of recommendation, Investigation generally is considered to be worthwhile with the requirement to evaluate the environmental and cost implications compared with the longer lifecycle approach.

The aesthetic contribution in schools is continually threatened by time and financial pressures leading to the formulaic repetition of designs, as Leftly (2009) actually recommends, and also the cultural charging of the internal communicative environment in schools; such cultural charging potentially subverts the importance of aesthetics. Therefore, whilst aesthetics is not viewed as the first major step towards cultural change its potential contribution to children's well-being remains relatively untouched by this thesis and warrants further investigation.

7.7 Closing remarks

This thesis is about understanding children. Design follows thereafter.

I have demonstrated the importance of involving children in research related to the design of schools in which their current and future well-being is shaped. I have also highlighted the joint challenge which faces the disciplines of Design and Education if the opportunity of investment in the fabric of schools is to be fully exploited. I propose, however, this will not be a revolution as many commentators urge.

Foremost, this thesis advocates the enrichment of the child-teacher relationship from which the form of the physical and indeed the virtual school environments should be derived.

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Appendix 1: Exemplar design brief (DfES, 2003b)

1

FINAL DRAFT

PRIMARY EXEMPLAR DESIGN BRIEF

A Summary of Sections 1 to 5, covering both the primary and secondary school briefs, has been produced as a separate document.

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Annexe 1: Schedules of Accommodation

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INTRODUCTION

This document sets out the design brief for the primary school exemplar designs. A core requirement of this project is to attract innovative solutions for the schools of today and tomorrow. As such, it is vital that the design allows the adaptability to accommodate the spaces and facilities expected for the current range of curriculum delivery, while offering options for future change.

Within the constraints of a design at RIBA stage C or D, the exemplar designs should demonstrate how the inspiring designs can be afforded within the costs available, while satisfying or exceeding all current statutory regulations and exhibiting best practice based on all current guidance. These requirements are set out in detailed information, such as 'room data sheets' in Annexe 4 and details in this brief.

These designs may then be used by others to develop modular or manufactured elements. As part of future Government initiatives, such as Building Schools for the Future, these could be used to replace large parts of many schools, while the remainder is upgraded.

All schools are different and the aim is not to develop a single 'one size fits all' design for all schools. Rather, the exemplar design should be able to respond to a wide variety of options, as well as allowing for the future possibility of existing buildings, such as recent sports hall, accommodating some activities.

This brief therefore uses a core brief and a number of variations to show different sizes of school, alternative possible schedules of accommodation for the same school, and different organisational and layout requirements. The requirements of the core brief and the variations are detailed and prescriptive where necessary, as one would expect in a design brief, but this does not indicate that this will be the specification for all schools in the future: it merely demonstrates a typical variety of options, common in contemporary schools that the exemplar design must address.

Whatever innovative teaching and learning methods are employed in the future, a basic level of relatively traditional teaching areas will currently be required, to ensure that all the activities demanded by the formal curriculum are accommodated. These, along with the crucial supporting storage and staff accommodation, form the basis of the schedules of accommodation included in this brief. However, while it is important to prove that these facilities can be accommodated in an excellent, cost effective environment, they only indicate a likely model of what would be required if the school were built.

The ability to engage effectively with the whole school community, capture and reflect the school's vision of itself and its future, will be critical to ensuring all schools are able to deliver their important but challenging and complex agendas

Every school will have its own philosophy for providing every pupil with the best possible education to allow them to achieve their potential. Schools will have a wide ranging Development Plan which sets out their priorities and how they will be delivered. Within the plan will be, for example, strategies on behaviour, inclusion, and ICT resources. How they decide to deliver these strategies will impact on the physical spaces needed. The internal and external environment of the schools must clearly allow for this without compromise.

The design should show an understanding that 'the school' is both the group of the people who work, socialise and learn together, as well as the school building and site

where these activities take place. Designs should embrace the needs of all users, including teachers, learning support assistants, specialists, visitors, parents, other support and service workers, pupils of all ages; some of whom will have disabilities, special educational needs or medical needs. They should provide good quality learning and working environments for everyone, with attractive support and personal spaces to encourage well being, self esteem, a sense of ownership, along with a positive relationship between the school and the local community.

Summary of Sections

A summary of both the primary and secondary exemplar briefs is available as a separate document.

SECTION 1: COMMON ASPIRATIONS: THE VISION FOR THE SCHOOL

1.1 This section outlines some overarching issues which will affect the design in the broadest sense. It uses the collective views of those involved in the steering group and representative primary school heads to describe the quality and feel of space and the sense of place which will reflect the vision, educational aims, culture, ethos and philosophy of the exemplar design.

1.2 The sub-headings below represent the more subjective requirements of a design, based on the views of schools asked to state the key issues for post-occupancy evaluation (POE). Other, more objective, points highlighted by the same group are covered in Section 2.

Educational Performance

1.3 Recent research has shown that the improvements to buildings and learning environments can have a significant impact on educational performance, and this is clearly a major driver of the decision to organise these exemplar designs.

1.4 The formal curriculum will require a range of appropriate, well equipped teaching spaces to be delivered well, and these are listed in the accommodation schedules. However, an equally important steer to the design can be the approach to more subtle curriculum issues.

1.5 The learning that takes place outside the formal timetable – in the playground, the corridor or during lunch – has been described as the 'informal curriculum'. The way such spaces are designed and managed can have a significant impact on opportunities for informal learning. For instance, seating areas and quiet corners encourage social interaction, and easy supervision can reduce bullying.

1.6 The message you get as you enter the school – described by the Learning Through Landscapes Trust as the 'hidden curriculum' – is another crucial influence on learning. The presence or absence of enthusiasm for and opportunities for learning can be sub-consciously 'read' in the frontage, the foyer or the corridors of a school, as well as in its classrooms. The school should be able to present an individual atmosphere, avoiding an institutional character, through welcoming entrances and interesting display.

1.7 The ICT strategy will differ in each school and over time. As the technology develops, they may move from ICT resources in specialist rooms to ICT that is mobile, wireless and perhaps personally owned and carried around the school by pupils. The primary school exemplar brief is based on an ICT strategy that assumes at least the Government target of one computer to every eight pupils. In line with common current practice, the core brief assumes two computers in each classbase and 15 computers in an ICT suite. A variation to this that may be more viable in the future, with laptops or 'tablets' satisfying the need for a full group to access ICT at the same time, is included in the brief. This assumes all ICT in larger classrooms and no ICT suite.

1.8 At present, schools tend to be used only during certain times of the day. In the future, ICT will enable the school building to be used more flexibly. Some pupils may learn from home or elsewhere for some aspects of their learning, and may not be required to be present in the building everyday, so the patterns of access have the potential to change radically.

Inspirational Environment

1.9 Schools provide a range of opportunities, appropriate to individual learning needs, for children and young people from a variety of backgrounds, cultures and faiths, and with a wide range of diverse needs. They should provide a feeling of belonging and a sense of place, by being clearly identifiable as part of a wider community.

1.10 The architecture of the school therefore needs to embody a wide range of needs, and embrace diverse values, accepting and allowing for expression of the multi-cultural, multi-faith nature of the school and the local communities it serves. Each school will be individual and it is important that schools are encouraged to express their own needs and have the opportunity to influence and tailor solutions to their own situation.

1.11 Children need spaces which allow them to express themselves. They will respond to the colour, light, sense of space, feel and look of a place. And they will respect spaces designed with their needs in mind. They require well thought out spaces which are light, airy and comfortable, and which welcome them to the school and create a sense of belonging.

Staff Satisfaction and the School Workforce

1.12 As well as learning institutions, schools are workplaces and must provide a high standard of working accommodation for teaching and non-teaching staff. A good quality working environment encourages positive self esteem which in turn encourages better performance and promotes a natural sense of achievement at work. It is essential that staff feel that their efforts are valued and rewarded, and an excellent working environment supports the school's recruitment and retention strategy.

1.13 The core of the school workforce reform agenda is creating capacity for teachers to focus on teaching, and activities that directly support teaching. It is also about enabling headteachers to lead, as well as manage. The central element will be increased numbers (and a wider variety) of support staff undertaking activities that free teachers in particular to concentrate on their core professional responsibilities.

1.14 Accommodation must therefore reflect the implications of more adults in schools. But it must also provide teaching spaces that can be adapted to different models of curriculum delivery, and space that enables teachers to get the most out of the time they have for preparation planning and assessment. This will support flexible ways of working and effective teaching and learning more generally.

Pupil Satisfaction

1.15 Pupils' satisfaction of with their environment can affect behaviour and self-esteem, and ultimately the willingness and ability to learn. All pupils, including those with special educational needs (SEN) and disabilities, should feel that their needs are respected – not only in teaching areas, but in toilets, circulation and playgrounds.

1.16 Pupils will range from those with physical disabilities to the able bodied; from those who are fascinated by new technology to those who excel at sport or the arts; from those with learning difficulties to those who are gifted achievers.

1.17 The design and disposition of spaces can be used to enhance and extend the

pastoral support structure in order to create a sense of belonging, especially among younger pupils. Even a small primary school can feel intimidating for pupils in their first year. It is therefore important to develop ways for pupils to get to know the buildings and each other gradually. Pupils can be grouped in various ways at different times, offering them the opportunity to discover new friends, interests and places within the school.

Community Involvement

1.18 [Community use will be a key aspiration of the school for the future.] Shared spaces are likely to include the main hall and perhaps the ICT suite. The primary exemplar brief includes some supplementary areas, including a room for parents and community to use during the school day, to encourage the involvement of the local community, parents and carers in sites where this may be particularly useful.

1.19 It is important to maintain the priorities required for school site use, whilst allowing use of the school buildings and site by the community users. Access and security will also be important, [as will the additional cost of maintaining the site out of school hours.]

1.20 The school may wish to stand out as a readily identifiable building and as a significant contribution to the community and surroundings. The architecture of the school may usefully express the value of education in the community and give a positive image of the school. The exemplar design school should be welcoming and designed to make the visitor feel good and want to find out what happens inside the building. Attractive landscaping around the buildings can create an inviting entrance frontage, with a welcoming reception area that is immediately identifiable and feels safe and secure when visitors, pupils and staff arrive.

Creating opportunities for innovation

1.21 The exemplar designs are expected to create innovative solutions to the use of space in schools. Exemplar designs should provide an opportunity to break down traditional barriers between teaching and non-teaching areas in order to maximise the available space and also benefit the user.

1.22 In the light of some of the issues above, the primary school heads involved in the briefing process have identified some specific issues around the design of social areas.

1.23 Another issue in the primary sector is the desire for internal areas for pupils to gather, socialise and access resources during breaks and before and after school. This might involve using circulation space to create a unique, memorable place at the heart of the school which celebrates the school's individual, identity and character.

1.24 Designing for and managing dual or multiple uses of spaces requires careful planning. Questions to explore include:

Which activities can, or cannot, take place concurrently in a space? It may be necessary to identify separate areas for quiet activities such as reading and relaxing and for noisier activities and meetings.

Which activities need dedicated spaces?

- How can spaces such as corridors be designed to accommodate large numbers of people but also include areas that feel more intimate?

SECTION 2: SPECIFIC DESIGN REQUIREMENTS

2.1 This section sets out the key design principles that should underline all exemplar designs. Many of these are based on regulations or guidance already in place, and these are defined where relevant, and all are at least to the minimum required by regulations. The criteria which designs should adhere to is summarised here, and set out in more detail in technical specifications in room data sheets in Annexe 4.

2.2 Designs should be capable of being developed and realised to comply with all current statutory legislation and include health and safety statements addressing the Design Stage for the Construction (Design and Management) Regulations. Designs should satisfy DfES educational planning criteria and should evidence best practice based on DfES Building Bulletins and guidance from other specialist advisory bodies.

2.3 All designs must achieve a reasonable minimum level of adaptability, security, access, design quality and environmental performance, but designers may wish to identify how these standards are or can be exceeded in some cases, for instance:

- fuller adaptability than that required could offer the opportunity for almost any space, apart from halls, to be used for any function, but this may have an implication on the cost of adaptations;
- more energy efficiency may be possible through a higher capital cost, but this might pay dividends in longer-term savings.

Flexibility and Adaptability

2.4 Like any school buildings, exemplar designs will need to be flexible enough to allow for short-term changes, for instance different layouts in a room to suit various teaching styles, and adaptable enough to suit longer term changes due to both evolutionary and revolutionary change: from developments in ICT to innovations in curriculum delivery.

2.5 The activities that happen in schools are likely to change substantially over the longer term. Only the dedicated specialist spaces – kitchens, halls, plant rooms and primary circulation areas, including staircases – are unlikely to move. However, they should be positioned carefully to allow for future change around them. Every other space, from offices to serviced practical areas, is likely to be reorganised to some extent over time.

2.6 Although there is no statutory requirement, flexibility and adaptability have been intrinsic in guidance on school buildings for many years.

Flexibility

2.7 The flexibility to change the use of space or the activities accommodated on a day to day basis is equally important. However, the design implications need not be sophisticated: specialist sliding/folding doors, for instance, are not often used effectively and can be acoustically inappropriate or prohibitively expensive.

2.8 Flexibility is also essential to enable the needs of individual pupils to be met. For example, a pupil who uses a wheelchair or works with an assistant may need a different furniture layout within the space, and perhaps also adjustable furniture, to work alongside others and to move around the room easily.

2.9 Most teaching rooms should provide a space that is sufficiently flexible to accommodate a broad range of activities and a variety of furniture and equipment. This can generally be achieved by keeping any fixed furniture and equipment to the perimeter and leaving the centre clear for loose furniture.

2.10 Designers will be expected to show initial furniture and equipment layouts for key example teaching spaces. These can then be used to test the suitability of the design proposal within the available space. It is essential to consider the particular activities taking place in each subject area, particularly for practical subjects such as design and technology, art, music and science, in order to refine the initial layout.

Adaptability

2.11 Adaptability in exemplar designs is paramount, for many reasons. Like any school, there needs to be an **ongoing adaptability** to be able to change the type or size of rooms in the future, for instance:

- for longer term change from classbases and an ICT suite to larger classrooms with room for portable ICT and no need for an ICT suite;
- to allow a variety of organisations, such as a foundation stage including both nursery and reception in one area, or curriculum delivery: both when the school is built and over time;

As the exemplar designs should be replicable in different forms, an **overarching adaptability** is also needed to create alternative designs within the same philosophy:

- to suit different sites, sizes or age ranges of school;
- for possible phased construction, starting with smaller schools, and future expansion or contraction in the number of places, whilst keeping year groups suited together;
- to accommodate supplementary facilities for non-school or support functions such as community use or specialist facilities for pupils with complex or severe SEN or disabilities.

2.12 The 10 variations identified in Section 3 have been identified to demonstrate the adaptability of each design.

2.13 Exemplar designs are aimed at the majority of schools, so while some schools require an open plan environment or very specialist facilities, the majority of primary schools continue to require classrooms, perhaps with some shared teaching areas, as well as smaller support spaces and halls. It is therefore sensible to assume that the adaptability required does not apply to large volumes such as halls (as defined in section 4): every school within the range of sizes accommodated by this project will require a main hall, which is the dimensions of a one-court sport hall for assembly, PE, dance, dining and community use, a music/ drama studio (although this would be supplementary area in the 1FE and ½ FE variations), related storage and a kitchen. These spaces are specialist and are not likely to need to be changed in the future.

Safety and Security

2.14 The school buildings and site need to feel secure for children, parents, staff and other users, designed for safe access and external circulation for pedestrians of all ages and vehicles.

2.15 Planning and design can positively improve safety and security, and should be considered at every stage of the brief. Pro-active planning strategies, such as Crime Prevention Through Environmental Design (CPTED), cover issues such as access control, natural surveillance and enhancing feelings of territoriality. All these influence how secure buildings will be.

2.16 The location of buildings on a site should be governed by how visible they will be from public thoroughfares or other occupied buildings. Paths from site boundaries and parking areas should provide clearly defined routes to the main reception area. Informal and social areas, bicycle compounds and car parking should be located so that they are overlooked from school buildings. Landscaping must not provide cover for potential intruders and should not include loose materials that can be used for vandalism.

2.17 The external spaces for sports and recreation areas need to include locations and levels of play areas for different user groups for safe use. Spaces between buildings, avoidance of overshadowing, external lighting, ease of maintenance, safety and security should all be considered. Security may be by means of passive supervision, surveillance, or even CCTV.

2.18 The designs should ensure that landscaping, roofs and canopies cannot be used as a climbing frame to provide access to upper windows, roofs and rooflights. Roofs should be designed to be difficult to climb on to or over; one solution is a pitched roof with deep overhanging eaves. Semi-open courtyards should be avoided, as well as alcoves and recessed doorways, as these provide hiding-places for trespassers.

2.19 Waste materials and recycling facilities should be accommodated in secure compounds away from buildings. Simple circulation patterns, avoiding sharp corners and blind spots, enhance vision and therefore improve safety. Cloakrooms and toilets should not be located in isolated places, where they may be perceived as being unsupervised and unsafe. Signage and routes, particularly for visitors, should be clear.

2.20 Internally, the exemplar school will provide well-organised circulation routes, with clear signage, for good orientation. Corridors should have good visibility for supervision, and should be well-lit to avoid congestion. Corridors routes can be opened up or enhanced with a variety of incidental places which combine enclosure and outlook, promoting social interaction and a sense of community.

Entrances

2.21 The ideal access arrangement is one easily controlled entrances to the site: for both staff and pupils, in which pedestrians and vehicles enter separately, and one for deliveries which is only opened when required. Any pedestrian entrances should only be open at peak arrival and departure times.

2.22 The entrance to the buildings should be visible from the pavement and the main public roads, and should also be positioned to allow people within the buildings to see who is coming and going. Careful planning is also needed to ensure safe and easy access for people with disabilities and people with young children. Points to consider include:

- the number of entrances should be as few as possible;
- security control, such as swipe cards and reception control;

- visitors toilet accessible from reception;
- relationship to bus drop-off, car parking, playing fields;
- use out of hours;
- welcoming feel, including good lighting at night;
- sheltered waiting.

2.23 The reception area should be welcoming and comfortable, but should not allow free access to the rest of the school. Ideally, once visitors have come in through the entrance doors, their credentials should be checked at reception before they are allowed to go further. Only when they have been signed in and given a badge should the inner door be unlocked. Both the inner and outer doors can be opened discreetly by remote control.

2.24 Other issues to be addressed include:

- furnishings, the provision of information points and the design of display areas;
- how people orient themselves and plan routes through the school;
- access for people with disabilities, with storage for wheelchairs and mobility equipment nearby;
- out-of-hours use, perhaps as a foyer to the main hall.

Access and Inclusion

2.25 The Government is committed to promoting the inclusion of pupils with special educational needs and disabilities in mainstream schools. This means that pupils with a variety of sensory impairments, physical disabilities and medical needs may need to be accommodated. Exemplar designs must therefore satisfy all current legislation¹ and best practice guidance².

2.26 The brief assumes that those pupils with severe learning difficulties disability and severe autism or more complex needs will usually attend a special school (which may be co-located) or may attend mainstream school on a part time inclusion basis

¹ Disability Discrimination Act 1995 Parts 2 Employment, Part 3 Provision of Goods and Services (1996) & Part 4: as amended by The Special Educational Needs & Disability Act 2001

Code of Practice BS 8300: Design of buildings and their approaches to meet the needs of disabled people (2001).

The Building regulations : Approved Document M

² Excellence for all Children, Meeting Special Educational Needs, The Green Paper (1997)

What the Disability Discrimination Act (DDA) 1995 means for Schools and LEAs: DfEE Circular 20/99 Guidance Note

Accessible Schools : Planning to increase access to schools for disabled pupils (July 2002) Guidance Note

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or for social activities programmed by arrangement and as appropriate for the individuals concerned. Additional facilities are allowed for this in variation 9.

2.27 One of the key effects of greater inclusion is an increase in pupil support, whether educational, social or medical. Pupils with special needs require assistance from a number of people including specialist teachers and health and social care professionals whose needs must also be considered.

2.28 Access to the entire curriculum is essential for all pupils, which means that designs should consider not only circulation and toilets for disabled people, but also the suitability of workstations, the layout of the school and the whole physical environment in relation to the likely population of pupils and adults, allowing for full wheelchair accessibility. Designs should allow full participation in everyday life at school as an enjoyable experience and promote pupils self esteem, social ability and learning achievement.

2.29 Exemplar Designs should provide the following design features and facilities:

- **Circulation:** Provide safe access and external circulation for accessibility for people with disabilities and special needs. This will include readily identifiable routes ('wayfinding' schemes) with colour contrast, tactile surfaces and good quality lighting and decoration to include good visual contrast and clarity of changes in levels and surfaces, wide enough for wheelchairs.
- **Signage** of appropriate size lettering with visual contrast to the background installed at an appropriate height where it is clearly visible to users, with tactile signage provided as appropriate.
- **Doors** which are easy to identify and user friendly to operate and allow for full wheelchair accessibility, with space for approach and operation of doors, with a single door leaf to be wide enough to allow access, with good visibility maintained on both sides of the door. Alternatively, doors can be held open on electromagnetic catches linked to the fire detection system.
- For all school premises, **ramps and stairs** have a shallower gradients and pitch, respectively, than for the current Building Regulations, which are more suitable for children. (The *DfES Constructional Standards* override on Ramps Steps and Handrails). Provide suitable handrails, balustrades and guardings which are attractive and easy to use by everyone. Lifts are to be sufficiently large and user friendly with swipe card access.
- Designs should allow suitable arrangements to be made for pupils or staff who cannot escape unassisted, particularly from upper floors. This is principally a management issue, but the usual requirement for alternative directions of escape should apply, with adequately sized refuges provided to allow pupils to wait in relative safety; these should be positioned either within all escape staircases or leading directly into them.
- Provide good quality **lighting** and blinds throughout to avoid glare for those with visual impairments. Downlighting should be avoided at reception and in teaching spaces, where cast shadows make lip reading difficult.
- Consideration should be given to choice of materials for **finishes**. Ceilings should have good light reflectance, acoustic absorption and low maintenance. Walls should have smooth surfaces which have acoustic absorption qualities but are resistant to heavy use and are easy to maintain. Floors should allow for safe, ease of movement, with suitable slip resistance, acoustic absorption, be hardwearing and easy to maintain. Avoid acoustically hard surfaces which

create unwanted background noise. Appropriate choice of materials and finishes encourage good behaviour of pupils.

- Identify furniture needs and allow for the appropriate space, size and height furniture for pupils with disabilities or special needs with adjustable height benching, tables and workstations.

Design Quality

2.30 Exemplar Designs are expected to have a high quality of design. The Roman architect Vitruvius suggested that the principal qualities of well-designed buildings are:

- **commodity:** buildings should be fit for the purpose for which they are designed;
- **firmness:** buildings should be soundly built and durable;
- **delight:** the design should please the eye and mind.

2.31 In current times, design quality remains difficult to measure, but this has been addressed to some extent by the Construction Industry Council (CIC) Design Quality Indicators³ and by the Commission for Architecture and the Built Environment (CABE)⁴, set up and funded by the Department of Culture Media and Sport (DCMS) and charged with promoting good design.

2.32 CABE's publication '*Better Public Buildings*' sets out the Government Policy to provide 'Good Design' for all public buildings. Qualities which reflect good design are identified along with associated criteria. The aim of the *Exemplar Designs* is to secure Best Value schemes for schools, in terms of whole-life costs and achieving good design.

2.33 CABE have set out five principles of good design that cover similar issues, as discussed in the summary:

- **Functionality in use:** Is the building fit for purpose, which in this case can be checked against the criteria in this brief, or even better, does it use know-how and innovation to provide business and social value? Does it optimise the operational cost of core services and, in particular, the productivity of staff?
- **Build quality:** Is the building built on whole life cost principles (as discussed in Section 5) – is it built to last and easy to maintain?
- **Efficiency and sustainability:** Is the building designed in a way that it will be completed on (or before) time, to budget and to specification? Is the building environmentally efficient (as discussed under 'environmental performance')?
- **Designing in context:** As discussed below, is the building respectful of its context, strengthening the identity of the neighbourhood in its landscape, and can the total design be seen as a homogenous whole?
- **Aesthetic quality:** and the need for a non-institutional, individual character.

This section concentrates on the last two of these issues, as the others are covered

³ www.cic.org.uk and dqi@cic.org.uk

⁴ For a more detailed description of how to assess quality of design, see CABE's 'Design Review' and 'Client Guide Achieving well designed schools through PFI', available from www.cabe.org.uk.

elsewhere.

Designing in context

2.34 The Government's guidance on urban and rural design, 'By Design' states that any new development should accord with the following principles – character, continuity and enclosure, quality of public space, ease of movement, legibility, adaptability and, where appropriate, diversity of use.

10 Key Points for the Good Design of a School

1. Good clear organisation, an easily legible plan, and full accessibility.
2. Spaces that are well proportioned, efficient, fit for purpose and meet the needs of the curriculum.
3. Circulation that is well organised, and sufficiently generous.
4. Good environmental conditions throughout, including appropriate levels of natural light and ventilation.
5. Attractiveness in design, comparable to that found in other quality public buildings, to inspire pupils, staff and parents.
6. Good use of the site, and public presence as a civic building wherever possible to engender local pride.
7. Attractive external spaces with a good relationship to internal spaces and offering appropriate security and a variety of different settings.
8. A layout that encourages broad community access and use out of hours.
9. Robust materials that are attractive, that will weather and wear well and that are environmentally friendly.
10. Flexible design that will facilitate changes in the policy and technology and which allows expansion or contraction in the future where appropriate.

Sustainability and Environmental Performance

2.35 Approved Document E in support of the Building Regulations applies to schools and quotes Building Bulletin 93 as the compliance standard for acoustics in schools. The performance of the exemplar school designs should be fully compliant with Section 1 of Building Bulletin 93. The standard is available on the website www.teachernet.gov.uk/acoustics.

2.36 Approved Document L2 in support of the Building Regulations, Conservation of Fuel and Power also applies to schools as described in the new 2003 edition of Building Bulletin 87, *Guidelines for the environmental design of schools*, available on the internet. This gives a maximum energy performance with which schools must comply by any of the three methods in AD L2. The new BB87 describes how the three methods should be applied in the case of school buildings and includes a spreadsheet calculation to demonstrate compliance for schools. It also describes how to apply the solar overheating criterion in the case of schools. BB87 and the spreadsheet can be downloaded from the website www.teachernet.gov.uk/energy.

2.37 Part F compliance should also be by means of using the BB87 performance standards for ventilation.

2.38 BB87 also covers heating and thermal performance, hot and cold water

supplies, and includes a lighting design framework and suitable performance standards for school lighting. Building Bulletin 90 *Lighting Design for Schools* contains more detailed guidance.

Developing an Environmental Assessment for the Exemplar Schools Programme

2.39 Exemplar designs will be assessed using the BRE Environmental Assessment Method (BREEAM). A specific BREEAM methodology is being developed to be used on the exemplar school design projects instead of the Building Bulletin 83, *Schools Environmental Assessment Method (SEAM)* published in 1996. The schools version of the BREEAM methodologies being prepared will cover the functions envisaged for these buildings, and will be used to assess construction projects implementing the exemplar designs.

2.40 BREEAM establishes a set of issue categories under which specific credit requirements are grouped. Within each category there are a number of credit requirements that reflect the options available to buildings designers and managers. Credits that are included in BREEAM must meet or demonstrate progress toward the scheme's aims and objectives as outlined earlier. From an assessment point of view it is important to ensure that:

- the information is readily available to enable assessment of the credit;
- the credit is practical to tackle - it must be an issue that the design team/client can address and one that leads to a known environmental benefit;
- the credit is practical to assess from a cost, time and resource point of view.

BREEAM method for schools: Issues

| <i>BREEAM method for</i> | <i>Description</i> |
|--------------------------|---|
| Management | Overall policy, commissioning and procedural issues. This will link to partnerships and methodologies based on manufacturing industries |
| Energy Use | Operational energy and CO ₂ issues including M&E systems and controls and type of plant |
| Health and Safety | Issues affecting health and safety including indoor air quality, fire safety and security. |
| Environmental conditions | Issues affecting the indoor and outdoor environmental conditions, including lighting, thermal comfort, ventilation, and acoustics. |
| Pollution | Air and water pollution |
| Transport* | Transport related CO ₂ and location related issues including pupil safety and sustainability of home to school transport. |
| Land Use* | Greenfield and brownfield site issues |
| Ecology* | Ecological value and use of the site |
| Materials | Environmental impact and sustainability of building materials |
| Water | Consumption and water efficiency |
| Educational and social | The use of the building as an educational and community resource |

* At the exemplar design stage these issues will largely be default assessments based on the

given site, but may be affected by the proposed site layout. At the build stage they will come into their own as important parts of the overall BREEAM assessment.

2.41 The table above lists the categories proposed for the BREEAM method for schools.

2.42 The categories in the table above vary slightly from the standard version of BREEAM and the detailed criteria will also vary from those in standard versions of BREEAM to take account of the specific nature of school buildings.

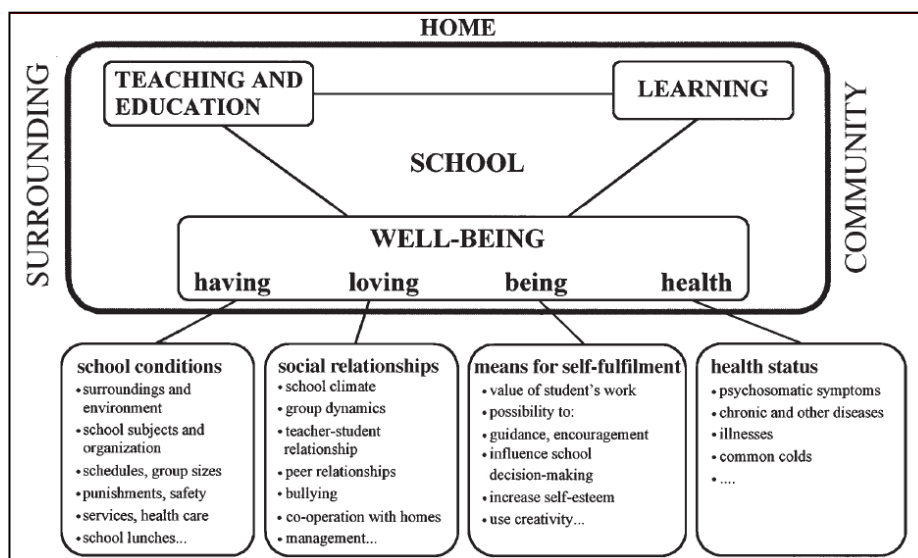
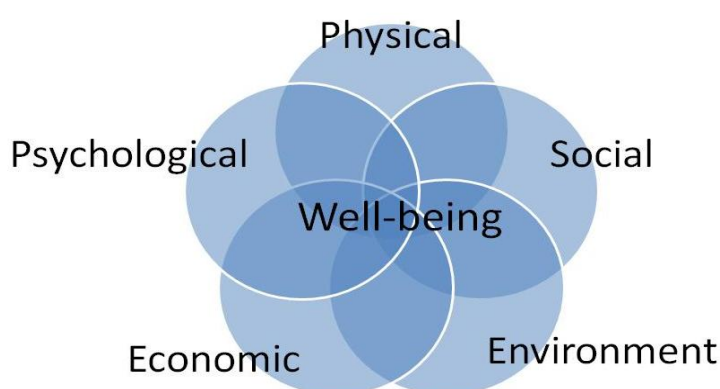
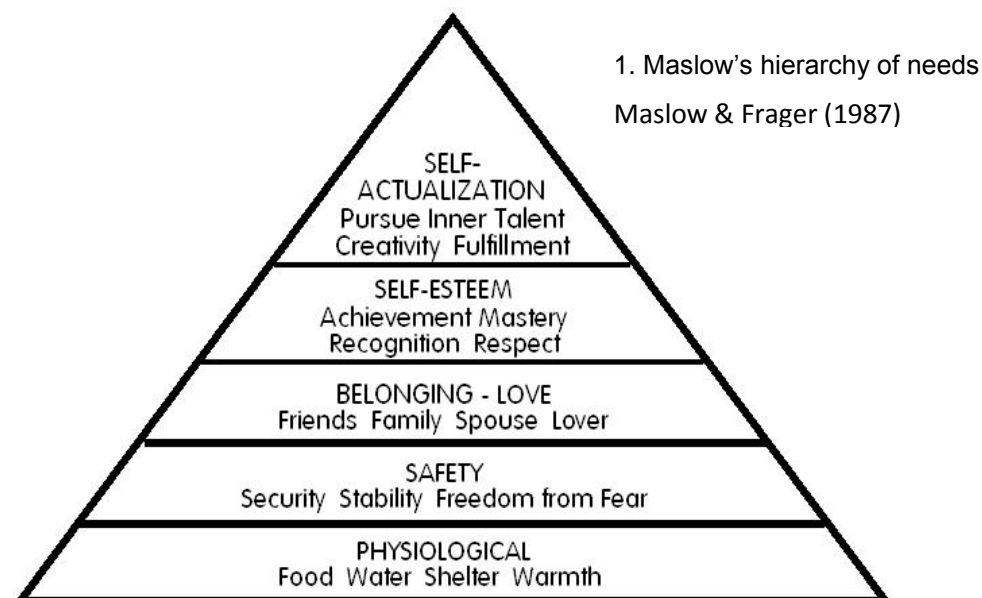
2.43 It should be noted that it is not necessary to achieve all assessment criteria in order to achieve a specific BREEAM rating. Some credit requirements have the effect of working against the aims of another and the method is developed to take account of this. The scoring and weighting section of this report outlines how the scoring process works and details of this will be provided along with the detailed assessment criteria.

2.44 The detailed assessment criteria and performance benchmarks are currently under development and appointed design teams will be required to participate in this development process as follows.

Design Team Responsibilities

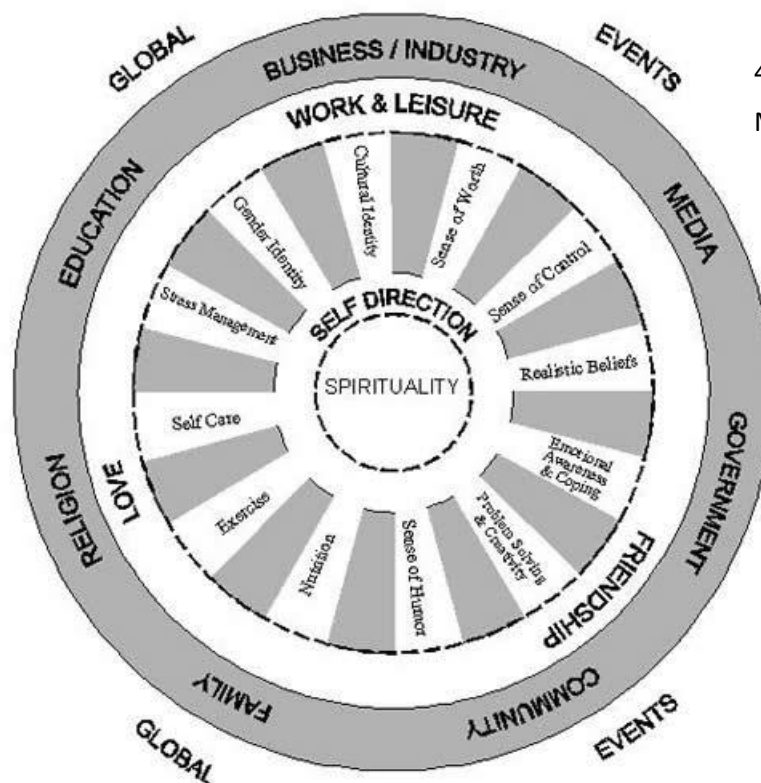
| Tasks | Due Date |
|---|---------------------------------|
| Design teams were required to comment on the draft BREEAM assessment methodology framework for exemplar schools supplied by the BREEAM unit at BRE and to give feedback on the list of issues to be assessed. | 11 June 2003 onwards |
| The BREEAM team provided advice and visited the design teams as required. | 2 July 2003 onwards |
| Each design team carried out a self assessment of their design/s using a score sheet prepared by BRE. This was then checked by BRE against the design details. The design teams were asked to provide additional information to justify some of the credits they had claimed. The BRE then reassessed the final designs and produced a report on the BREEAM rating that each design is likely to achieve on a real project. | September 2003 to February 2004 |

Appendix 2: Examples of models of well-being

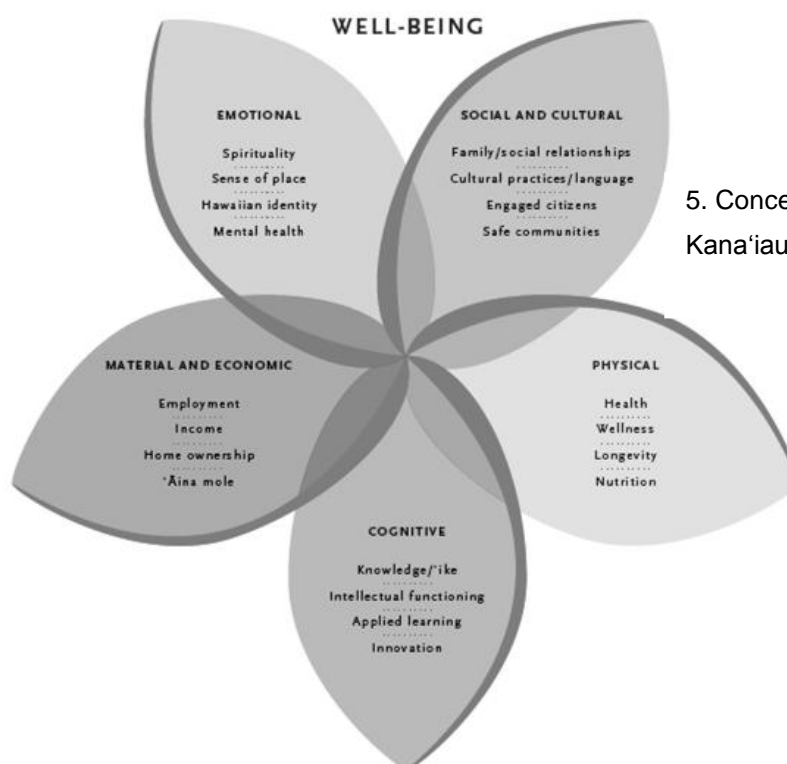


3. Conceptual model of School well-being. Konu & Rimpelä (2002b)

Figure A2-1 Examples of variations of models and perspectives of well-being



4. Wheel of Wellness
Myers et al. (2000)



5. Conceptual model of well-being
Kana'iaupuni et al. (2005)

Figure A2-1 Examples of variations of models and perspectives of well-being (Continued)

| Needs according to existential categories Needs according to axiological categories | Being | Having | Doing | Interacting |
|--|---|--|--|---|
| Subsistence | 1/ Physical health, mental health, equilibrium, sense of humour, adaptability | 2/ Food, shelter, work | 3/ Feed, procreate, rest, work | 4/ Living environment, social setting |
| Protection | 5/ Care, adaptability, autonomy, equilibrium, solidarity | 6/ Insurance systems, savings, social security, health systems, rights, family, work | 7/ Cooperate, prevent, plan, take care of, cure, help | 8/ Living space, social environment, dwelling |
| Affection | 9/ Self-esteem, solidarity, respect, tolerance, generosity, receptiveness, passion, determination, sensuality, sense of humour | 10/ Friendships, family, partnerships, relationships with nature | 11/ Make love, caress, express emotions, share, take care of, cultivate, appreciate | 12/ Privacy, intimacy, home, spaces of togetherness |
| Understanding | 13/ Critical conscience, receptiveness, curiosity, astonishment, discipline, intuition, rationality | 14/ Literature, teachers, method, educational policies, communication policies | 15/ Investigate, study, experiment, educate, analyse, meditate | 16/ Settings of formative interaction, schools, universities, academies, groups, communities, family |
| Participation | 17/ Adaptability, receptiveness, solidarity, willingness, determination, respect, passion, sense of humour | 18/ Rights, responsibilities, duties, privileges, work | 19/ Become affiliated, cooperate, propose, share, dissent, obey, interact, agree on, express opinions | 20/ Settings of participative interaction, parties, associations, churches, communities, neighbourhoods, family |
| Idleness | 21/ Curiosity, receptiveness, imagination, recklessness, sense of humour, tranquility, sensuality | 22/ Games, spectacles, clubs, parties, peace of mind | 23/ Day-dream, brood, dream, recall old times, give way to fantasies, remember, relax, have fun, play | 24/ Privacy, intimacy, spaces of closeness, free time, surroundings, landscapes |
| Creation | 25/ Passion, determination, intuition, imagination, boldness, rationality, autonomy, inventiveness, curiosity | 26/ Abilities, skills, method, work | 27/ Work, invent, build, design, compose, interpret | 28/ Productive and feedback settings, workshops, cultural groups, audiences, spaces for expression, temporal freedom |
| Identity | 29/ Sense of belonging, consistency, differentiation, self-esteem, assertiveness | 30/ Symbols, language, religion, habits, customs, reference groups, sexuality, values, norms, historical memory, work | 31/ Commit oneself, integrate oneself, confront, decide on, get to know oneself, recognize oneself, actualize oneself, grow | 32/ Social rhythms, everyday settings, settings which one belongs to, maturation stages |
| Freedom | 33/ Autonomy, self-esteem, determination, passion, assertiveness, open-mindedness, boldness, rebelliousness, tolerance | 34/ Equal rights | 35/ Dissent, choose, be different from, run risks, develop awareness, commit oneself, disobey | 36/ Temporal/spatial plasticity |

6. The Human Scale Development Model. Max-Neef et al. (1987)

Figure A2-1 Examples of variations of models and perspectives of well-being (Continued)

Appendix 3: School design basics related to the well-being model

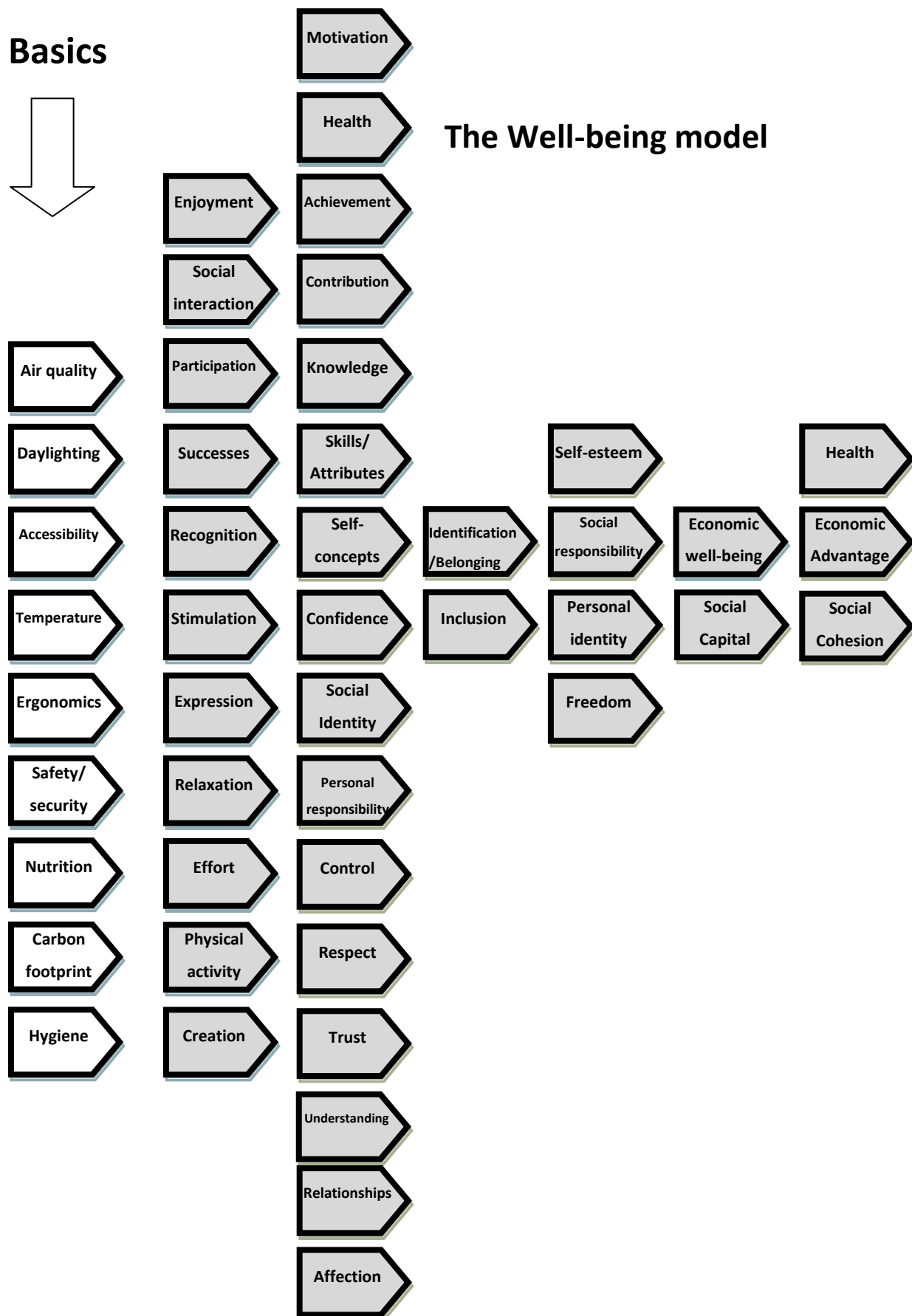


Figure A3-1 Basics of school design contributing to well-being

Appendix 4: School profiles

The studies were carried out in two primary schools located in quite different socio-economic settings. These are School S in Southampton and School A in a village near Andover, Hampshire. Supportive exploratory research was carried out in School B in Birmingham.

Despite different socio-economic and architectural contexts, both study schools sustain a central position and role within their respective communities. The centre of School A comprises the school, the pub, the church and the village shop. 'My whole family's been' says Connor; there is a sense of tradition and family involvement which exists within the school. Local sources suggest that School A was established in 1831 and, with the coronation of Queen Victoria in 1837, it can be broadly referred to as Victorian.

Built in the 1960s, School S is similarly central to its community. Its estate location is in an area close to Southampton International Airport and which is overlooked by an imposing factory. Both offer a source of jobs for the children's parents which, according to the head teacher, has a considerable influence on the aspirations of the children and the importance the families place on schooling. 'I'm going to be a working man,' as one of the boys told me.

According to CILT, the National Centre for Languages, in 2008 there were 17,205 maintained primary schools in England for 4,087,790 pupils. This equates to an average of 238 pupils per school (CILT, 2009). In this respect both School A and School S are smaller than average. The official definition of a *small school* is a school that has a roll of 100 children or less (DCSF, 2007); while School A is at the top of this range it can be considered a small school. School S, on the other hand, is larger with a roll of approximately 170 children (DCSF, 2007).

Small schools often exist and operate as a result of their rural nature and School A's village location is evidence of this.

4.1 School A

4.1.1 Introducing the school

The Ofsted report carried out at School A in October 2007 describes the school as:

..... a small rural primary school, which admits pupils mostly from the immediate area. Pupil numbers are increasing over time. Almost all pupils are from White British backgrounds.

The number of pupils identified with learning difficulties and disabilities is above average. Pupils are taught in mixed aged classes(Ofsted, 2006).

Ofsted's summary of School A appropriately indicates the mixed age class approach which is necessitated by the smaller intake of children. In fact it is in this type of school, though perhaps even smaller, where Medd developed the Finmere model, emerging in 1959. However, the central concepts of team teaching and other collaborative methods which the open nature of the school at Finmere enabled are not easily achieved in School A.

4.1.2 The School A environment

The site has developed over time and the old school house is no longer part of the school. Today, having entered through the security gate and passed a temporary wooden clad classroom to the right, the visitor finds themselves in a small walled playground with various markings on the floor. The temporary classroom accommodates Class 3, the Year 5/6 class. Although rows would be easier to accommodate, inside the desks and chairs have been arranged to provide a form of grouping more in line with modern teaching ideas (see Chapter 2). The space is constrained and in practice requires regular movement and alteration. This classroom is also used for the school assemblies.

The playground contains a variety of benches, including what is referred to as the friendship bench which features in the belonging studies. These benches are used socially but also for outdoor eating at lunchtime if the weather is fine.

At the far end of the playground is a small outbuilding which is both the staff room and an equipment store; each function has a different door for access. At the far end, further to the left and still on the perimeter of the playground is another wooden shed used to house equipment.

Adjacent to the Class 3's temporary classroom is the head teacher's office which is also located on the edge of the play area. This is a wooden clad temporary raised flat roof structure in the same style as Class 3.

On the opposite side of the playground is the main school building which is a red brick, slate pitched roof single-storey building. The first door leads to the small school office and a corridor which contains the library and leading off which are the toilets. This corridor heads directly to the classroom which houses Class 2, a Year 3/4 class. The room is a high ceilinged well-lit yet narrow classroom boasting its original wooden beams. Desks are grouped together, in a typical primary

fashion, so that four to six children can sit at them. This leaves only limited circulation space. Unlike most primary school classrooms there is no seated space at the front. At the back of the classroom are an IT area and a very small cloakroom.

Contrasting with this is probably the largest teaching space in the school used for Reception and Year 1 children; this class is known as the Puffins. Entrance to the Puffins follows a sharp turn to the right from the main corridor. Smaller tables and chairs are similarly grouped but the area feels spacious and manages to contain a play area and an open cloakroom. The cloakroom is on the wall adjoining the playground and leads towards the second door opening out from the main building onto the playground. Alongside this is the school kitchen from which meals are served in the Puffins classroom at lunchtime.

At the back of the Puffins class is the Year 1/2 classroom, the Turtles. This is perhaps the smallest teaching space but its high ceiling and glass doors afford a spacious feel. Once again there are three groups of tables and a seated area in front of the interactive whiteboard.

The classroom doors lead out onto a raised, enclosed grassy area which also contains a wooden toy shed.

4.2 School S

4.2.1 Introducing the school

The Ofsted description of School S highlights differences between the two schools:

The school is smaller than many primary schools. It serves a community that includes some areas with very high levels of social deprivation. The proportion of pupils entitled to free school meals is twice the national average. The percentage of pupils with learning difficulties and disabilities is well above the national average. The proportion of pupils who do not speak English as their first language is above average and is increasing. The proportion of pupils from minority ethnic groups is also above average. There have been considerable changes of staff since the last inspection. More pupils enter and leave the school at times other than the beginning of the school year than in most schools(Ofsted, 2008).

4.2.2 The School S environment

School S is a very different architectural prospect from School A. While School A has evolved and grown over time and space needs to be continually managed, School S, a 1950s/60s building, does not suffer from these restrictions.

It features a layout designed around a central hall and kitchen. The far end of the hall leads to the classroom area housing the infants, i.e. Reception, Year 1, Year 2 and Year 3. There are three classrooms, two of which lead to a covered and enclosed outdoor space. The third faces the dedicated library which is a distinct building, sited between the two schools, and is only accessible from the playground.

Despite the increase in furniture size which is apparent in the Year 2/3 classroom, the rooms are generally spacious. Typically they contain grouped tables and chairs and a seated area in front of the interactive whiteboard. The central chest of drawers is a feature of all the classes with a drawer allocated for the possessions and books of each child. The Year 1/2 classroom, the Pandas, also contains very detailed display which appears to be the work of the teacher rather than the children.

On the other side of the hall is located an open reception area with a recently updated front desk. The large display in the reception area emphasises the School S community with images of the children and their work. A large blue board behind the school secretary details the School S mission statement. Beyond the reception is a corridor which leads passed the head teacher's office and the staff room to the junior school. Here there are three classrooms each of which can be opened to the outside. The ICT suite is included in the circulation space, as are the juniors' toilets. The school also benefits from extra space known as the booster room, the music room and SEAL (Social and Emotional Aspects of Learning) space. The music room is doubly used for breakfast club and recent changes to the layout allow the prospect of a community role for this space.

The playground area is expansive compared with School A and is split into three distinct areas for the reception children, the infants, and the juniors. The junior playground is dominated by the marked-out football pitch.

Similar in principle to the friendship bench at School A there is a buddy stop which is like a bus stop at which children can stand if they are in need of a friend.

There is also a good sized playing field used in fine weather.

4.3 School B

4.3.1 Introducing the school

School B was opened in 1950 by Birmingham County Borough Council and their resident architects. The school typified the regeneration that was seen in Birmingham after the Second World War, particularly evident in the rapid development of the local area.

With a population of 460 children School B is a large school, described by Ofsted:

This large primary school takes most of its pupils from the local estates and tower blocks of Castle Bromwich. The proportion of pupils eligible for free school meals is well above average. An average number of pupils have been identified as having learning difficulties or disabilities. Pupils' attainment on entry to the Nursery is well below average, with language and social skills being especially weak (Ofsted, 2006).'

4.3.2 The School B environment

The school was designed prior to Plowden and is devoid of any obvious contemporary considerations of child-centred schooling apart from one area of open corridor space which allows for collaboration between classes. Mainly, however, School B was designed to accommodate the population growth of the locality, with 14 classrooms in use by 1961.

Entrance to School B is an unremarkable event and beauty and visual impact are not qualities easily attributable to the exterior of the school; its persona is unexceptional and almost non-existent. The unmistakably post-War frontage is testament to the fact that primary schools of that era were manifestly unconcerned with their visual impact. In this respect School B is a good example of design devoid of aesthetics and contrived messages. While its frontage has almost no impact, at the same time it does not promise anything the school cannot deliver or embody messages which have long since lost their relevance.

School B's access is via a controlled back gate which leads directly to the junior school and incorporates a separate vehicle entrance for teacher parking. The front entrance provides the main thoroughfare for both arriving and leaving children together with vehicle access for teachers and visitors. Today's schools will separate vehicular and pedestrian access as a matter of course.

Rather than using the main school entrance, on arrival children and parents will normally skirt the school building and access the school from the playground, entering close to their respective classrooms. This limits the main entrance to a reception area for visitors or parents with children. Access is controlled by a buzzer and intercom system which releases the door to lead the visitor into a slightly claustrophobic, warm lobby.

The lobby is generously decorated with children's work and a sliding communication window opens onto the school office. From a visitor's point of view it is an awkward although understandably secure process. There are two office chairs upholstered in fabric within the lobby but they do little more than obstruct an already confined space; a token gesture to assign a semblance of a desired space that this area cannot hope to be. The restricted space also renders the children's large bus display too close to the observer to generate any real comprehension or appreciation. I wonder how long it has been there.

Once signed in, the opposite door is released to allow access to the school.

School B is physically split into an infant school and a junior school, both having their own halls, but sharing a dining room.

The infant school is at ground floor level apart from the computer room which is situated above the office/reception area and is used by both the infants and the juniors. Saint identifies that many schools, particularly primary, came to be built on a single level following the introduction of new stringent daylighting requirements brought in 1945 and the subsequent use of structures to allow for taller windows, clerestory windows and roof lights (Saint, 1987).

In School B, the central corridor forms the spine of the infants with the hall, dining room, staffroom, head teacher's room and one classroom on one side with the rest of the classrooms on the other. The central corridor in School B is a busy affair. It has plentiful natural light with windows located along one side. Although the corridor's width is suitable for comfortable passage alone, the space has been allocated additional tasks; the corridor includes a small themed seating area near the hall and a library at the reception end.

In School B the use of displays is uncoordinated centrally and teacher-driven. It is purely down to each individual teacher's discretion.

School B was designed with the classroom as the understood space of teaching and learning. The Year 1 classroom has good natural light and feels spacious. There is a large window facing South

East and a line of clerestory windows facing North West. In my perception the generous ceiling height, approximately 5.5m, adds to the sense of space. However, it is feasible that, for a child half my height and with a similar space preference, a relative 2.7m would also feel generous.

The classroom décor is a little tired with chipped paintwork and the room contains typical FORME-style rectangular furniture with its associated child-sized chairs. The spaciousness of the room allows the tables, which are grouped in threes, to be well spread and still leave a carpet area for sitting on the floor in front of the teacher and the interactive whiteboard. The teacher's chair is a low casual chair chosen for appropriate for interaction with children on the floor.

The junior school is on two levels. Prominent on the outside of the building is a snake design seating area and just inside the building are some toadstool seats fixed to the ground. The ground floor consists of a central corridor with classrooms on the South East side and work rooms and a music room facing North West. The corridor is dark. It is decorated with work related to projects the school has been involved with. The hall is at the far end of this corridor beyond a library/reading area which has some sofas and soft stools arranged near a rocket pod which contains a seat and a computer. The ceiling heights are much more restricted and the corridor has no direct access to natural light.

Upstairs, access to the classrooms is via two flights of stairs so that the four central classrooms are directly adjacent negating the need for a central corridor. There is an access door between the two classrooms on the South West side and an access door between the two classrooms on the North East side. It interested me in the light of the open plan discussion how distracting it was when the door was open and the other class was visible and audible.

The colour scheme is indeterminate, in keeping with the rest of the school.

The Year 5 classroom, located on the first floor of the junior school building, has a very different feel to it from Year 1. It relies more obviously on artificial light, particularly on dull days. The effectiveness of its skylight designed to capture sunlight from the south is compromised by the corrugated perspex, wiring and grubbiness which mask it.

With a lower ceiling height and larger children and furniture, this room is cluttered and feels cramped and awkward. However, the lower ceiling height does afford the opportunity for a hanging display which would be impossible in the Year 1 classroom. Here the paper lanterns and a planet display designed by the children decorate the ceiling.

The wall displays, primarily designed to impart information are a little complex and seem to function more as wallpaper. Additionally the layout means that the teacher is quite often talking to the backs of children.

Outdoors there is a large infant playground containing some snake furniture and a large junior playground marked with various games and sports pitches. Adjacent to corridor there is a seating area in which large stakes designed as coloured pencils provide the learning-related aesthetic. The playgrounds lead to a playing field.

Appendix 5: Example of consent form – School S



Buckinghamshire Chilterns
UNIVERSITY COLLEGE

This form will be retained by School S for reference. The information you provide will be retained for five years and then disposed of confidentially.

CONSENT FOR PHOTOGRAPHS / VIDEOING

| | | | | |
|---|--|------------------------------------|--|--|
| <p>I give permission for my son/daughter to be involved in the Belonging and School Design Project and to have photos and videos taken.</p> <p>The images and video will be used by Rob Cullis, a PhD design student at Buckinghamshire Chilterns University College (BCUC), to study the relationship between a child's sense of belonging and their school environment. This will then be used to create new design ideas to continue to improve the School S learning environment.</p> <p>The children will also be involved in activities within their classes which will look at how they feel and respond to their school surroundings.</p> <p>Some of the images/video footage will be used in a final report and in presentations to organisations involved in designing schools.</p> <p>All use will be appropriately agreed between the school and BCUC.</p> <p>We will not use any personal information that could identify your child beyond their first name and age in conjunction with the images/ footage.</p> | | | <p>IMPORTANT</p> <p>This form must be completed by a parent or guardian if participant is under 18 years of age and by the participant if he/she is over 18 years of age.</p> | |
| Name of Participant: Class: | | Male or Female | | |
| Address of Participant: Postcode: | | Tel (Inc STD) Date of Birth | | |
| | | | | |
| Name: Relationship to Participant: | | Tel: | | |
| Address: Postcode: | | Alt. Tel: | | |

STATEMENT:

I understand the information above and (please tick below)

☐ **I agree**

☐ **I DO NOT agree**

to my son/daughter taking part and being photographed/ videoed and the images/ footage being used in the report and presentations, provided personal details are withheld from the public.

I will inform my son/daughter of the decision that has been made on their behalf.

Signed

Parent/Guardian

Date / /

Appendix 6: Favourite colours

The following schematics illustrate the results of a study with the four classes at School A and School S. Each child was asked to point out their favourite colour on a colour chart following which the results were compiled by gender and Key Stage.

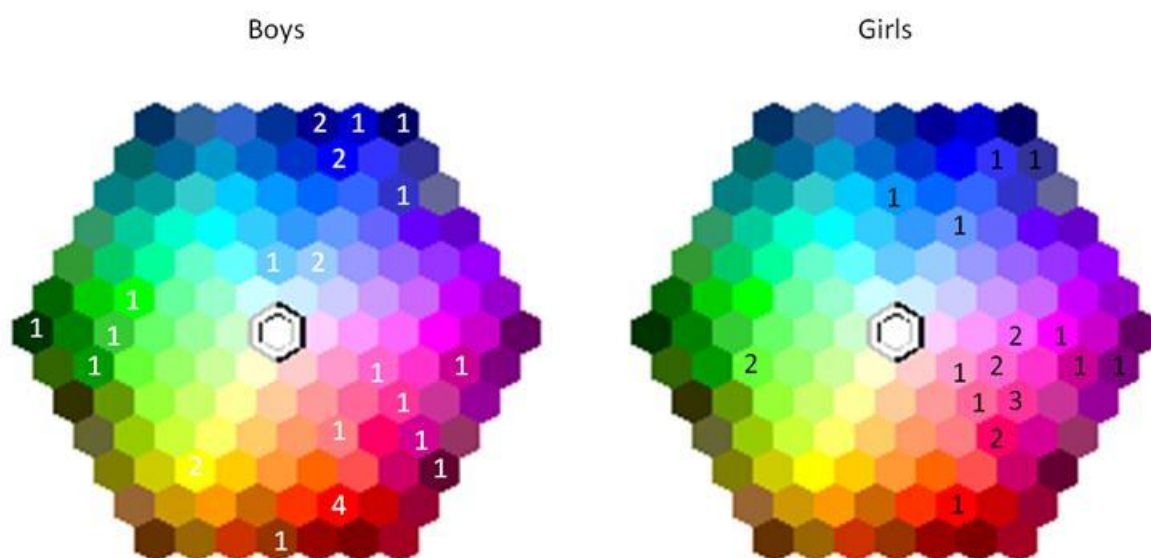


Figure A6-1 Boys' and Girls' colour preferences KS1 – indicates number of children by colour choice

In Key Stage 1, illustrated in Figure A6-1, darker blues and bright red dominates for boys. However there is a range which encompasses dark blue, light blue, red, pinks and purples and greens and yellow.

For girls pinks clearly dominate, and linked with this is the choice of purple. This is followed by blues although not the navy colours associated with the boys' choices. More limited but still evident is the choice of green and red.

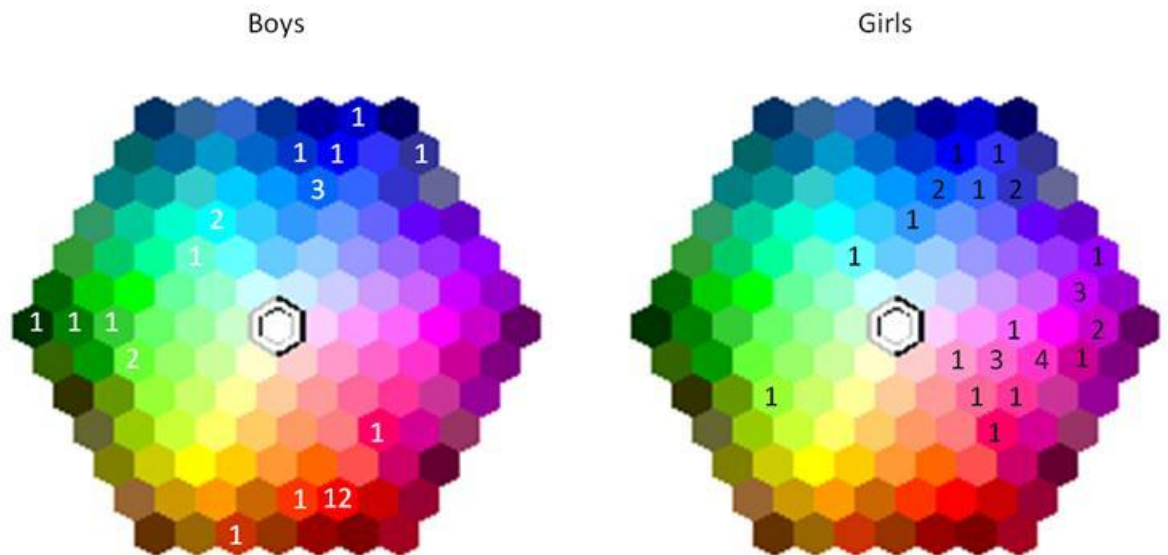


Figure A6-2 Boys' and Girls' Colour preferences KS2 - indicates number of children by colour choice

By Key Stage 2, illustrated in Figure A6-2, bright red dominates for boys and outweighs the darker blues. It is relevant that one particular red is chosen. The choice of pink for boys appears to diminish with age, perhaps being culturally and socially influenced. The overall range of choices, however is broad and encompasses dark blue, light blue, red, and greens.

For girls pinks and purples dominate. The purples illustrate a development of preference beyond the 'baby' pinks. Despite this the responses are much more polarised towards pinks and blues.

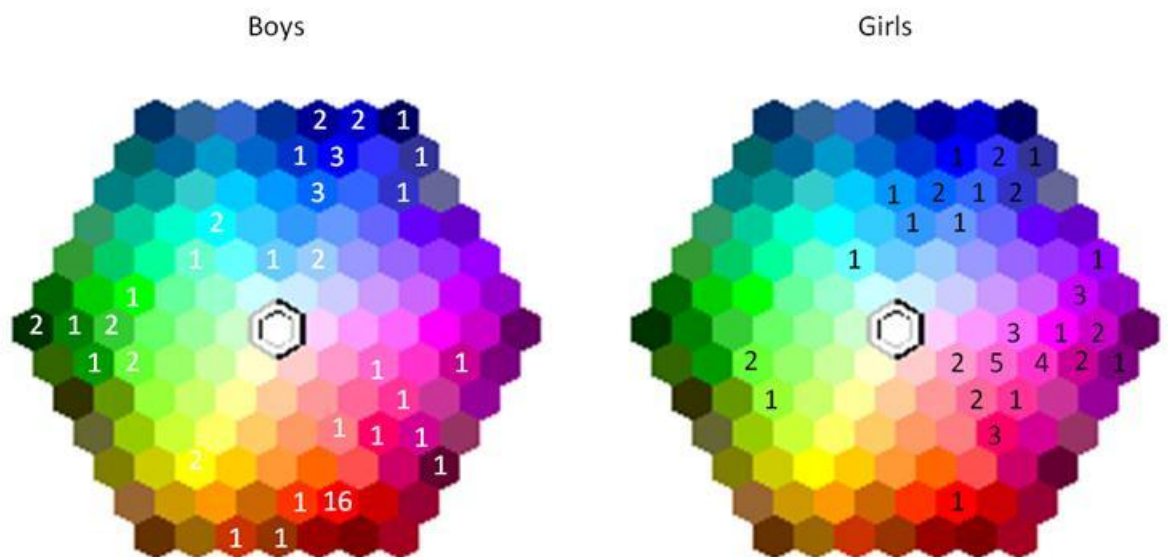


Figure A6-3 Boys' and Girls' Colour preferences KS1 and KS2 - indicates number of children by colour choice

Appendix 7: Identity card images, associative ratings and category

7.1 School S - Year 1 & 2



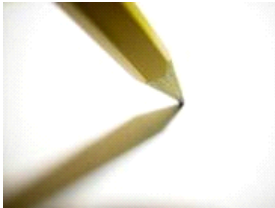
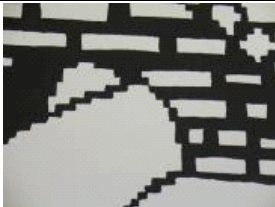

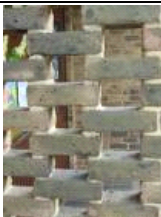
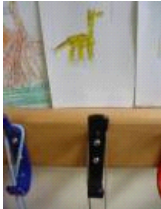
| | | | Associative Rating | | | Category |
|---|---|-----------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | A | Junior Toilets | 0 | 3 | 2 | Architecture |
|  | B | Hall Amplifier | 1 | 3 | 2 | Object |
|  | C | Pencil | 3 | 1 | 0 | Object |
|  | D | School Logo | 3 | 1 | 2 | Communication |
|  | E | Trophy | 3 | 2 | 2 | Object |
|  | F | Playground Wall | 0 | 3 | 2 | Architecture |
|  | G | Coat Hook | 2 | 2 | 2 | Furniture |

Figure A7-1 Identity cards, associative ratings and category - School S Year 1 & 2

| | | | Associative Rating | | | Category |
|---|---|---------------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | H | Ability Group Sign | 3 | 1 | 1 | Communication |
|  | I | Paper Mache Giraffe | 3 | 2 | 2 | Object |
|  | J | Classroom Tile | 0 | 3 | 0 | Decor |
|  | K | Class Bear | 3 | 2 | 3 | Object |
|  | L | Car Mat | 1 | 3 | 2 | Object |
|  | M | School S Code | 3 | 1 | 2 | Communication |
|  | N | Hall Floor | 3 | 3 | 3 | Architecture |
|  | O | Southampton FC | 0 | 1 | 1 | Decor |

Figure A7-1 Identity cards, associative ratings and category - School S Year 1 & 2 (Continued)

| | | | Associative Rating | | | Category |
|---|---|----------------------|--------------------|--------------------------|--------|--------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | P | Access Road | 0 | 2 | 1 | Architecture |
|  | Q | Hall Rafter | 0 | 3 | 2 | Architecture |
|  | R | Canopy | 1 | 3 | 1 | Architecture |
|  | S | Junior Playground | 1 | 2 | 3 | Architecture |
|  | T | Wooden Train | 0 | 3 | 2 | Furniture |
|  | U | School S Hands | 3 | 3 | 3 | Decor |
|  | V | Onions | 2 | 2 | 3 | Object |

Figure A7-1 Identity cards, associative ratings and category - School S Year 1 & 2 (Continued)

7.2 School S - Year 5

| | | | Associative Rating | | | Category |
|---|---|----------------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | A | School Logo | 3 | 1 | 2 | Communication |
|  | B | Trophy | 3 | 2 | 2 | Object |
|  | C | Hall Floor | 3 | 3 | 3 | Architecture |
|  | D | Junior Playground | 1 | 2 | 3 | Architecture |
|  | E | Reception Mirror | 1 | 3 | 0 | Object |
|  | F | Hall Rafter | 0 | 3 | 2 | Architecture |
|  | G | Access Road | 0 | 1 | 1 | Architecture |

Figure A7-2 Identity cards, associative ratings and category - School S Year 5

| | | | Associative Rating | | | Category |
|---|---|-----------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | H | Vent | 0 | 3 | 0 | Architecture |
|  | I | School S Hands | 3 | 3 | 2 | Decor |
|  | J | Classroom Rules | 3 | 2 | 0 | Communication |
|  | K | Bullying Notice | 3 | 1 | 2 | Communication |
|  | L | Border | 1 | 3 | 0 | Decor |
|  | M | Newspaper | 2 | 3 | 0 | Object |
|  | N | Number Line | 3 | 2 | 0 | Object |
|  | O | Reception Light | 0 | 3 | 0 | Furniture |

Figure A7-2 Identity cards, associative ratings and category - School S Year 5 (Continued)

| | | | Associative Rating | | | Category |
|---|---|-------------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | P | School S Code | 3 | 1 | 2 | Communication |
|  | Q | Plug | 1 | 2 | 0 | Object |
|  | R | Ceiling Panel | 2 | 2 | 0 | Decor |
|  | S | Hall Pillar | 3 | 3 | 2 | Architecture |
|  | T | Fire Exit Sign | 2 | 2 | 0 | Communication |
|  | U | Goal Posts | 2 | 3 | 3 | Object |
|  | V | Fire Extinguisher | 2 | 2 | 0 | Object |

Figure A7-2 Identity cards, associative ratings and category - School S Year 5 (Continued)

7.3 School A - Year 1 & 2








| | | | Associative Rating | | | Category |
|---|---|---------------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | A | Learning Group List | 3 | 1 | 1 | Communication |
|  | B | Vent | 0 | 3 | 2 | Architecture |
|  | C | Artex Ceiling | 0 | 1 | 0 | Decor |
|  | D | Teacher Board | 3 | 1 | 2 | Communication |
|  | E | Keyboard | 2 | 1 | 0 | Object |
|  | F | Abacus | 2 | 2 | 1 | Object |
|  | G | Ivy | 1 | 3 | 2 | Decor |

Figure A7-3 Identity cards, associative ratings and category - School A Year 1 & 2

| | | | Associative Rating | | | Category |
|---|---|------------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | H | Friendship Bench | 3 | 3 | 3 | Furniture |
|  | I | Gate Release | 3 | 2 | 0 | Communication |
|  | J | Tiled Floor | 1 | 1 | 1 | Architecture |
|  | K | Chimney | 1 | 3 | 0 | Architecture |
|  | L | Crucifix | 3 | 2 | 1 | Object |
|  | M | Mascot | 3 | 2 | 1 | Object |

Figure A7-3 Identity cards, associative ratings and category - School A Year 1 & 2 (Continued)


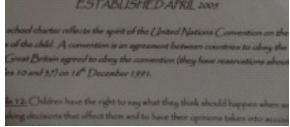





| | | | Associative Rating | | | Category |
|---|---|----------------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | N | Step | 1 | 3 | 3 | Architecture |
|  | O | Charter | 3 | 1 | 2 | Communication |
|  | P | School Badge | 3 | 1 | 2 | Communication |
|  | Q | Library | 3 | 2 | 0 | Object |
|  | R | Thatched Roof | 1 | 3 | 0 | Architecture |
|  | S | Fan | 2 | 3 | 0 | Furniture |
|  | T | Star of the Day Sign | 3 | 1 | 2 | Communication |

Figure A7-3 Identity cards, associative ratings and category - School A Year 1 & 2 (Continued)

7.4 School A - Year 5 & 6








| | | | Associative Rating | | | Category |
|---|---|-------------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | A | Tiled Floor | 1 | 1 | 1 | Architecture |
|  | B | Drawing of School | 1 | 3 | 1 | Architecture |
|  | C | Teacher Board | 3 | 1 | 2 | Communication |
|  | D | Ivy | 1 | 3 | 2 | Decor |
|  | E | Mascot | 3 | 2 | 1 | Object |
|  | F | Gate Release | 3 | 2 | 0 | Architecture |
|  | G | Crucifix | 3 | 2 | 1 | Object |

Figure A7-4 Identity cards, associative ratings and category - School A Year 5 & 6





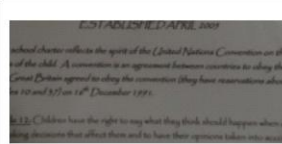


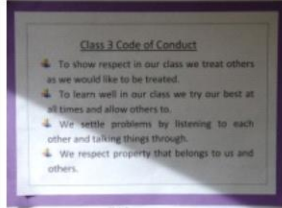
| | | | Associative Rating | | | Category |
|---|---|------------------|--------------------|--------------------------|--------|---------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | H | Friendship Bench | 3 | 3 | 3 | Furniture |
|  | I | Chimney | 1 | 3 | 0 | Architecture |
|  | J | House Point Cup | 3 | 2 | 2 | Object |
|  | K | Noticeboard | 3 | 1 | 2 | Communication |
|  | L | Charter | 3 | 1 | 2 | Communication |
|  | M | School Badge | 3 | 1 | 2 | Communication |
|  | N | Air Conditioner | 1 | 3 | 0 | Object |
|  | O | Class 3 Rules | 3 | 1 | 2 | Communication |

Figure A7-4 Identity cards, associative ratings and category - School A Year 5 & 6 (Continued)

| | | | Associative Rating | | | Category |
|---|---|---------------|--------------------|--------------------------|--------|--------------|
| | | | Cultural | Aesthetic/ Functional | Social | |
|  | P | Thatched Roof | 1 | 3 | 0 | Architecture |
|  | Q | Projector | 2 | 3 | 1 | Object |
|  | R | Wall Display | 3 | 3 | 1 | Decor |
|  | S | Step | 1 | 3 | 3 | Architecture |
|  | T | Winner Board | 3 | 2 | 1 | Object |
|  | U | Vent | 0 | 3 | 2 | Architecture |
|  | V | Library | 3 | 2 | 0 | Object |

Figure A7-4 Identity cards, associative ratings and category - School A Year 5 & 6 (Continued)

Appendix 8: Calculation of belonging

The belonging calculation can therefore be split into belonging to the Cultural school, the social school and the aesthetic/physical school. For example, the child's Likert rating of the School S Code was 2. This can be assumed to be apportioned in the following way:

8.1 Image 1 – Beth's Likert Rating = 2

Image 1, like all images, was rated on a scale of 0 to 3 for its associative properties, shown in Figure A8-1:

| | | | | | |
|----------|----------|----------|----------------------|----------|--------|
| 3 | Cultural | 1 | Functional/Aesthetic | 1 | Social |
|----------|----------|----------|----------------------|----------|--------|

Figure A8-1 Rating of Image 1 - Cultural, social and functional/aesthetic

The Likert rating of 2 can therefore be apportioned in the following way:

Cultural: $3/(3+1+1) = 60\%$ of 2 relates to identification with the cultural school, i.e. **1.2**. The maximum possible for this image, by comparison, is 60% of 4, i.e. **2.4**.

Functional/Aesthetic: $1/(3+1+1) = 20\%$ of 2 relates to identification with the physical/aesthetic school, i.e. **0.4**. The maximum possible for this image, by comparison, is 20% of 4, i.e. **0.8**.

Social: $1/(3+1+1) = 20\%$ of 2 relates to identification with the social school, i.e. **0.4**. The maximum possible for this image, by comparison, is 20% of 4, i.e. **0.8**.

8.2 Image 2 – Beth's Likert Rating = 3

| | | | | | |
|----------|----------|----------|----------------------|----------|--------|
| 2 | Cultural | 3 | Functional/Aesthetic | 1 | Social |
|----------|----------|----------|----------------------|----------|--------|

Figure A8-2 Rating of Image 2 - Cultural, social and functional/aesthetic

The Likert rating of 3 can therefore be apportioned in the following way:

Cultural: $2/(2+3+1) = 33.3\%$ of 3 relates to identification with the cultural school, i.e. **1.0**. The maximum possible for this image, by comparison, is 33.3% of 4, i.e. **1.33**.

Functional/Aesthetic: $3/(2+3+1) = 50\%$ of 3 relates to identification with the physical/aesthetic school, i.e. **1.5**. The maximum possible for this image, by comparison, is 50% of 4, i.e. **2.0**.

Social: $1/(2+3+1) = 16.7\%$ of 3 relates to identification with the social school, i.e. **0.5**. The maximum possible for this image, by comparison, is 16.7% of 4, i.e. **0.67**.

8.3 Calculating belonging

Taking these images together:

Cultural: $1.2 + 1.0 = 2.2$ relates to identification with the cultural school out of a possible $2.4 + 1.33 = 3.73$, indicating an overall belonging to the cultural (physical) school of **58.9%**.

Functional/Aesthetic: $0.4 + 1.5 = 1.9$ relates to identification with the functional/aesthetic (physical) school out of a possible $0.8 + 2.0 = 2.8$, indicating an overall belonging to the functional/aesthetic (physical) school of **67.9%**

Social: $0.4 + 0.5 = 0.9$ relates to identification with the social school out of a possible $0.8 + 0.67 = 1.47$, indicating an overall belonging to the social (physical) school of **58.9%**.

The belonging develops in this way with each of the images contributing to an overall figure for a child's belonging to the cultural school (**58.9%**), functional/aesthetic school (**67.9%**) and social school (**58.9%**), and then an overall belonging which in this case is the mean of 50% (Likert rating 2 out of a possible 4) and 75% (Likert rating 3 out of a possible 4) = **62.5%**.

8.4 Representing belonging in index form

Supposing there are three children whose belonging is shown in Table A8-1 in which the results are represented as a percentage and an index.

| | | Beth | Simon | Marcus | Overall |
|--------------------------|--------------|------------|------------|------------|------------|
| Cultural | % | 52% | 88% | 76% | 72% |
| | Index | 75 | 128 | 110 | 104 |
| Functional/aesthetic | % | 45% | 95% | 55% | 65% |
| | Index | 65 | 138 | 80 | 94 |
| Social | % | 50% | 90% | 70% | 70% |
| | Index | 72 | 130 | 101 | 101 |
| Overall belonging | % | 49% | 91% | 67% | 69% |
| | Index | 71 | 132 | 97 | 100 |

Table A8-1 Belonging Results as a percentage and index for Beth, Simon, and Marcus in relation to the Cultural, Social, and Functional/Aesthetic School

The mean *Overall Belonging* for the class is always shown as 100. Its components, like cultural belonging, are shown in relation to it.

8.5 Calculating recognition and understanding

During the exercise Beth, for example, will also demonstrate a level of recognition and understanding. For example, if she recognises and fully understands what the School S Code represents, this is a level two 2 in Figure A8-3 which is the maximum and therefore 100%.

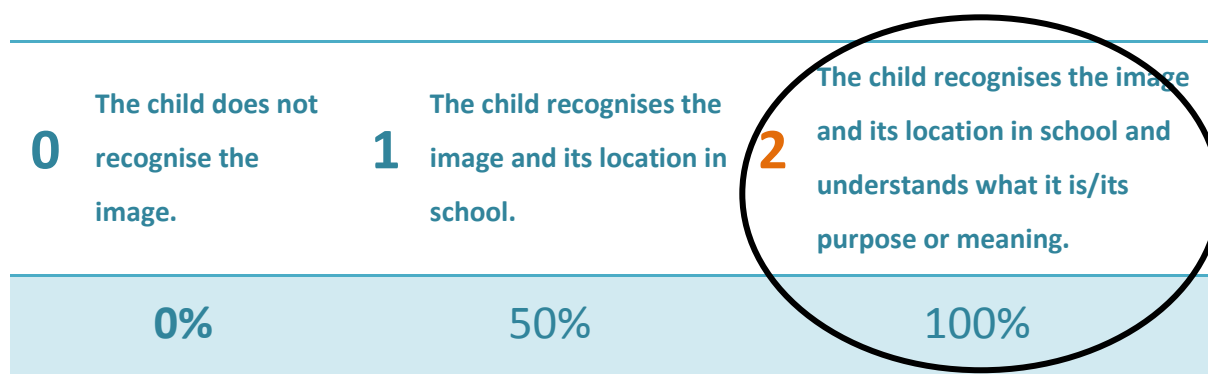


Figure A8-3 Example: Beth's Recognition and Understanding Level for The School S Code

If, for example Beth's recognition and understanding results for five images are 100%, 0%, 50%, 100% and 50%, her overall figure is calculated as the mean of these, i.e. 60%.

The studies in Chapter 3 and 4 suggested that children's intimate knowledge of their environment was related to positive feelings about the school. The detail of places and things they did not like was less well articulated which suggests that recognition and understanding is likely to be connected with the sense of belonging measure. It is recognised also however that recognition can also reflect memory and intelligence, or age, rather than positive identification and therefore recognition and understanding is not incorporated in the measure of belonging but is compared with it.

Appendix 9: Developing a class social map

| | | | | | | | | | | | | | | | | | | | |
|-----------|---|------|--------|------|---------|--------|--------|--------|-------|--------|---------|--------|-------|----------|-------|-------|-----|---------|-----------|
| | | F | M | M | F | M | M | M | F | M | M | F | F | F | M | F | M | M | F |
| | | Mary | Robert | Mark | Jessica | Daniel | Thomas | George | Olive | Oliver | Michael | Alexis | Sarah | Nathalie | James | Laura | Tom | Cameron | Charlotte |
| Mary | F | 0 | 3 | 4 | 2 | 4 | 3 | 2 | 1 | 3 | 3 | 2 | 1 | 2 | 3 | 1 | 4 | 4 | 2 |
| Robert | M | 4 | 0 | 1 | 2 | 1 | 1 | 3 | 4 | 2 | 2 | 3 | 4 | 3 | 3 | 4 | 2 | 3 | 2 |
| Mark | M | 2 | 2 | 0 | 3 | 1 | 1 | 1 | 2 | 3 | 3 | 4 | 2 | 4 | 4 | 3 | 2 | 4 | 3 |
| Jessica | F | 2 | 1 | 4 | 0 | 4 | 4 | 2 | 3 | 1 | 1 | 4 | 3 | 2 | 3 | 2 | 3 | 2 | 3 |
| Daniel | M | 3 | 3 | 1 | 3 | 0 | 1 | 2 | 4 | 2 | 2 | 4 | 4 | 3 | 2 | 3 | 1 | 2 | 4 |
| Thomas | M | 4 | 2 | 1 | 2 | 1 | 0 | 3 | 4 | 4 | 2 | 3 | 4 | 3 | 2 | 2 | 1 | 3 | 3 |
| George | M | 3 | 2 | 1 | 4 | 2 | 3 | 0 | 1 | 4 | 3 | 3 | 1 | 4 | 2 | 3 | 2 | 2 | 4 |
| Olive | F | 2 | 4 | 4 | 2 | 4 | 3 | 2 | 0 | 3 | 4 | 1 | 1 | 2 | 3 | 1 | 3 | 2 | 3 |
| Oliver | M | 2 | 1 | 4 | 1 | 3 | 4 | 3 | 2 | 0 | 1 | 3 | 2 | 3 | 4 | 2 | 3 | 4 | 2 |
| Michael | M | 4 | 1 | 4 | 1 | 2 | 3 | 2 | 4 | 1 | 0 | 4 | 3 | 3 | 3 | 2 | 2 | 3 | 2 |
| Alexis | F | 2 | 4 | 2 | 3 | 2 | 4 | 3 | 1 | 4 | 4 | 0 | 1 | 3 | 3 | 2 | 2 | 3 | 1 |
| Sarah | F | 1 | 3 | 2 | 4 | 4 | 4 | 3 | 1 | 3 | 4 | 2 | 0 | 3 | 2 | 1 | 2 | 2 | 3 |
| Nathalie | F | 2 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 4 | 2 | 2 | 0 | 4 | 1 | 4 | 4 | 1 |
| James | M | 4 | 2 | 3 | 2 | 3 | 1 | 1 | 4 | 2 | 4 | 2 | 3 | 4 | 0 | 3 | 2 | 3 | 1 |
| Laura | F | 1 | 3 | 4 | 2 | 3 | 4 | 3 | 1 | 4 | 2 | 2 | 1 | 2 | 4 | 0 | 3 | 3 | 2 |
| Tom | M | 3 | 2 | 1 | 4 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 2 | 4 | 4 | 4 | 0 | 1 | 3 |
| Cameron | M | 2 | 4 | 1 | 2 | 2 | 4 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 3 | 1 | 0 | 4 |
| Charlotte | F | 3 | 4 | 4 | 1 | 3 | 2 | 2 | 3 | 2 | 1 | 1 | 4 | 2 | 2 | 3 | 3 | 4 | 0 |
| | | 44 | 44 | 44 | 40 | 45 | 48 | 36 | 40 | 46 | 45 | 45 | 41 | 50 | 52 | 40 | 40 | 49 | 43 |

Figure A9-1 Collating the children's social maps

With a map from each child, an overall picture of the class social network was obtained by aggregating each child's responses. The numbers associated with each circle on each child's social map, shown in Figure 5-6 in Chapter 5, represent a rating of the closeness of each relationship from one to four. Figure A9-1 illustrates how these ratings are collated to provide totals for each child.

The method identifies the child with the lowest aggregate rating as the most socially central child, and therefore at the centre of the social circle. In this example, the most central child is George. This child is then notionally placed at the centre of the circle in position 0. The total size of the social circle is then measured by how far the child with the highest aggregate rating is from the centre. This is done by taking their aggregate rating (52) minus the aggregate rating of the central child (36). The resultant number, 16, is meaningful only as a relative figure which enables the position of each child in the social circle to be assessed. For example, with Alex at the centre, Jessica is at 4 and Thomas is at position 12, indicating their relative centrality/popularity. In order to allow different classes to be compared, the effect of class size needs to be negated. In the example in Figure A9-1, 16 is divided by the number of ratings each child would receive, which is the number of children in the class minus 1. (The children position themselves in the centre of their own map which is zero-rated and therefore does not count). This produces a figure of 0.94.

Finally, in order to reduce the number of decimal places to simplify the presentation, this figure is multiplied by 10. For example, 0.94 is presented as 9.4.

Considering two different scenarios provides the social extremes which any one class can theoretically present. If, through the mapping process, every child received the same aggregate rating this would mean that every child is equally central, or popular. In this case every child would be at the centre and the size of the circle would be zero.

In contrast, it is possible that Simon receives a full complement of '1's. In a class of 10, his aggregate rating, including his own zero rating, is:

$$0 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 9$$

In the same class assume Lucy receives all '4's from the other children, making her aggregate rating:

$$0 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 36$$

Whatever the other ratings are in the class, Simon can only be at the social centre of the class and, correspondingly, Lucy must be on the social edge of the class. These positions can be shared but no one can be more central than Simon or more distant than Lucy. The size of the social circle for this class is therefore:

$$[(36 - 9)/9] \times 10 = 30$$

Hence for all classes, whatever the number of pupils, the maximum possible size of the social circle is a radius of 30.

In the example illustrated in Figure A9-1, the size (radius) of the social circle is 9.4. If the size of another class' social map is 10.4, this indicates that the least central child is further out from the centre and it is potentially a less socially inclusive class. However, understanding how the other children are distributed within each social circle is necessary to understand the true picture.

Appendix 10: Belonging studies - Year 1 & 2

10.1 Describing the classes – Year 1 and 2

10.1.1 School S: Year 1 and 2 (Pandas)

10.1.1.1 The social circle

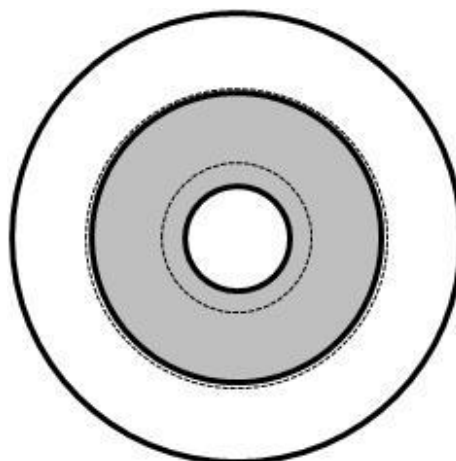


Figure A10-1 Whole class social circle - School S Year 1 & 2

The size of the Pandas' circle is 9.8 which indicates the position of the most outer child relative to the most central child. If the individual ratings given to the most central child remain the same, the maximum possible Pandas' circle would be 18.9, signifying social isolation for one or more children. The Pandas, however, do not appear to demonstrate this type of social exclusion.

The Pandas' social circle is characterised by the tight social centre illustrated in Figure A10-1; the circle is split into thirds referred to as the centre, middle, and outer sections, which each includes a third of the children. These compare with the dotted lines which represent an evenly distributed social class described in Chapter 5 based on the same size of social circle. It is noticeable that, despite a tight centre, the middle circle is relatively stretched which suggests that the children in the outer circle are not overly exposed or isolated.

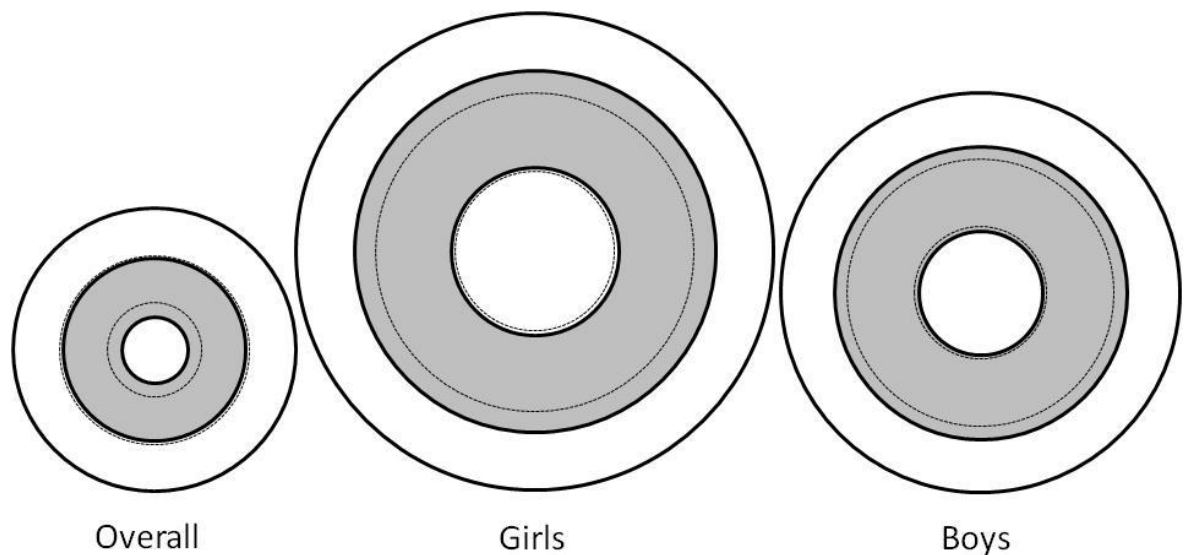


Figure A10-2 Class social circles - gender comparisons - School S Year 1 & 2

Looking at the divide by gender illustrated in Figure A10-2, the girls' circle is much wider (16.5) than the class social circle. The centre is made up entirely of girls and, in particular, is dominated by Year 1 girls. Two girls are notably in the outer circle. The social circle according to the boys is also wider (13.8) but it would seem that girls are more discriminating in this class. Though dominated by boys, unlike any of the other gender-based circles to be shown for other classes, it includes a girl in the centre. Secondly, looking at the individuals in each of the segments, the boys' circle is much less structured around age.

What is apparent from Figure A10-2 is that gender has an overriding influence on the social structure of the Pandas' class, to the point where two social circles can be considered to co-exist. The fact that both the girls' and the boys' social circles are wider than the class' social circle implies that, when taken together, the overall social positions of children even out. While this outcome was predicted, the results for the Pandas are more pronounced than expected.

10.1.1.2 Relationships

Assessing the types of relationships across the whole class, each child on average has a reciprocated close friendship with 2.1 children. Looking at how this is distributed across the social circle shows an imbalance: 2.9 in the central circle, reducing to 1.8 in the middle circle and 1.6 per child in the outer circle. This is higher for the girls, particularly in the outer circle. It can be argued that close reciprocated friendships are a natural and healthy aspect of the class society and a lower number of this type of relationship might be expected towards the outer edge of the social

circle. However significant imbalances in these figures can provide a picture of a cliquey or exclusive class, for example.

On average children in the class matched 7.8 of their relationships which represent 29% of the 27 relationships they have in the class. In the social centre this increases to 9.3 (35%), with a gradual decrease to the outer circle to 6.4 (24%). One year 2 boy and one year 1 girl, matched 13 (48%) and 12 (44%) of their relationships respectively which demonstrates a high degree of social awareness relative to the rest of the class. All those with the lowest matches are noticeably on the outer edges of the class, the lowest being 3 matches (11%).

An indicator of mutual disinclination towards other children can be found where both children within a relationship have positioned the other child in an outer circle rated as a four. If this is a common feature of the class, it can be considered to be antagonistic. On average, a child in the Pandas class will have one mutual disinclination. This figure is 0.8 in the centre circle, 0.7 in the middle circle and 1.6 in the outer social circle. The highest number is 3 expressed by 3 outer children.

10.1.2 School A: Year 1 and 2 (Turtles)

10.1.2.1 The social circle

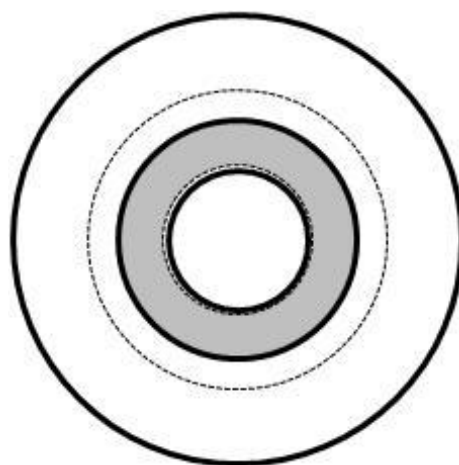


Figure A10-3 Whole class social circle - School A Year 1 & 2

The size of the School A Turtles circle is 9.4 which is slightly smaller than that of the School S Pandas. Despite what would appear to be a more inclusive class by nature of its smaller social circle, Figure A10-3 indicates how the children are spread across this circle and suggests that the children in the outer circle are more remote.

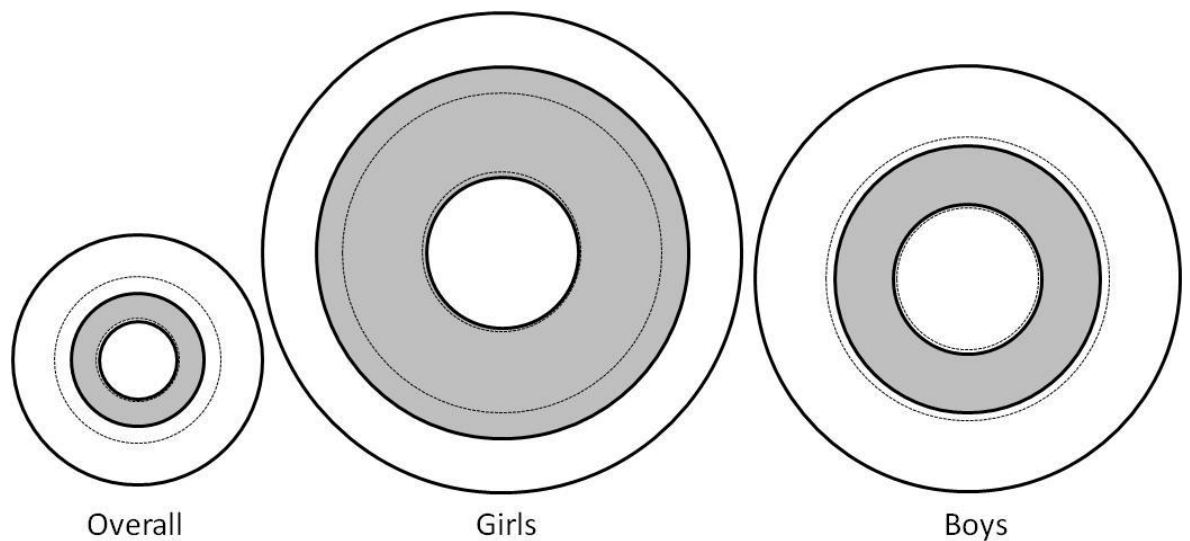


Figure A10-4 Class social circles - gender comparisons – School A Year 1 & 2

Considering the social circles by gender shown in Figure A10-4 two very distinct social circles exist in a very similar way to the School S Pandas. The girls' social circle is correspondingly dominated by the girls and is much wider (18) than the overall class' circle and the boys' circle. A hierarchy based on age is also suggested although in School A the older girls prevail compared with the younger girls in School S. A rough observable pattern, working outwards from the centre, is: Year 2 girl, Year 1 girl, Year 1 boy, Year 2 boy. Beyond the centre, the circle becomes much more stretched.

The social circle according to the boys is also wider (16) and the centre is typically dominated by boys. Jessica, the most central girl appears at 6.2 with Julie and Samantha at position 10. The centre is less structured around age. It is noticeable that the Matthew is the second most outer child. It would appear that boys and girls roughly concur with are the less central children exposing them in the overall class circle.

10.1.2.2 Relationships

The School A Turtles present the opportunity to compare the School S relationships. At School A, each child on average has a reciprocated close friendship with 1.7 children. This is 2.2 in the central circle, reducing to 1.7 in the middle circle and 1 per child in the outer circle. Overall these figures are lower than the School S Pandas. Most noticeable is what can be viewed as a much less tight knit centre circle than the Pandas but also an outer circle in which children have less close relationships.

The GDBD study in Chapter 3 revealed the dependence of children on the teacher and perhaps this more relaxed social environment and more intense academic environment is reflected in the overall intensity of the social circle.

The results at School S indicated that children's understanding of their relationships declined towards the outer circle. This is replicated at School A although the percentage of relationships matched is higher. On average children in the class matched 6.3 of their relationships which represent 37% compared with 29% at School S, although possibly related to fewer relationships in a smaller class. Overall, boys matched fewer of their relationships which could demonstrate lesser ability to appraise social relationships but could also be predicated by a more relaxed attitude which is evident in the smaller social circles.

It is apparent that in School S the outer children are more affected by disinclination or, possibly, antagonism.

10.2 Year 1 & 2: Social position

Reviewing the social circles against the results from *Good Bad Happy Sad* enables certain conclusions to be made about the formation of these social circles and what aspects of the child's school context might relate to their popularity. The study so far suggests that the social circles are reasonably distinct by gender and therefore the comparison with *Good Bad Happy Sad* is best done in this way.

Looking for commonality across both the Year 1/2 girls' social circles discloses certain characteristics of a socially central girl. Firstly more central girls typically perceive their overall behaviour to be medium. They will also typically be perceived by the teacher to be less able, most evident in School S (See Figure A10-5) but they will not perceive their own ability to be low.

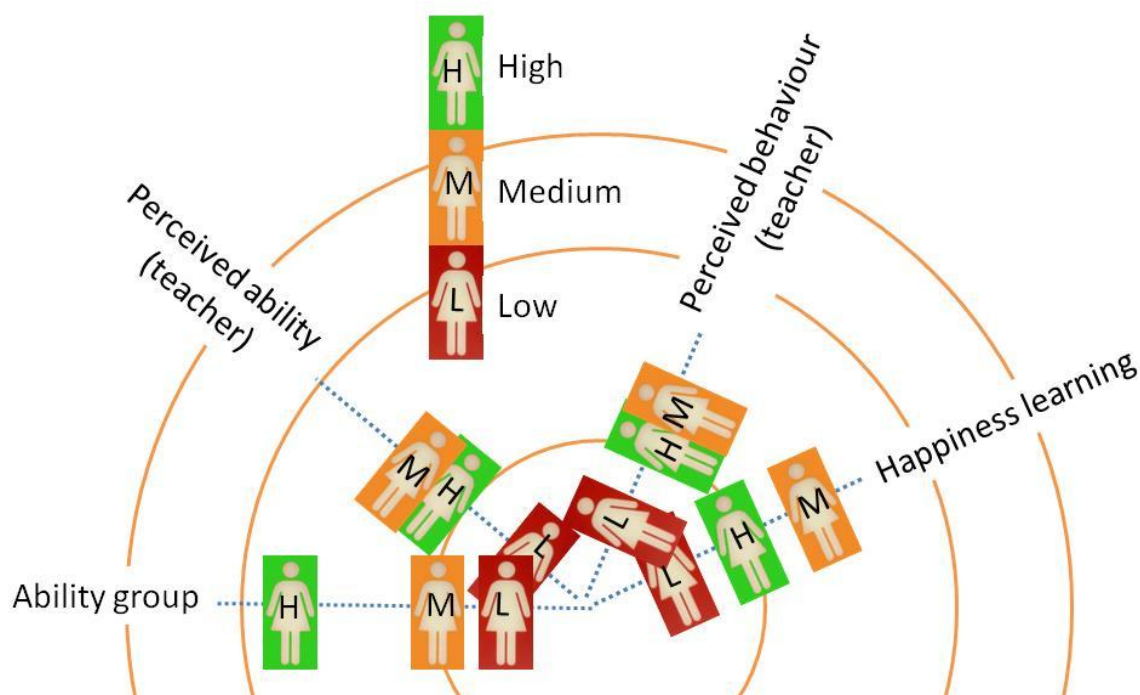


Figure A10-5 School S Year 1 & 2 girls - School context measures related to the social circle

While this provides a common picture for the two classes, Figure A10-5 illustrates the clearest relationships indicated by the year 1 & 2 girls at School S which suggest that girls' popularity is linked to characteristics which might be considered at odds with a learning and achievement culture. Girls in the highest learning group are markedly less popular.

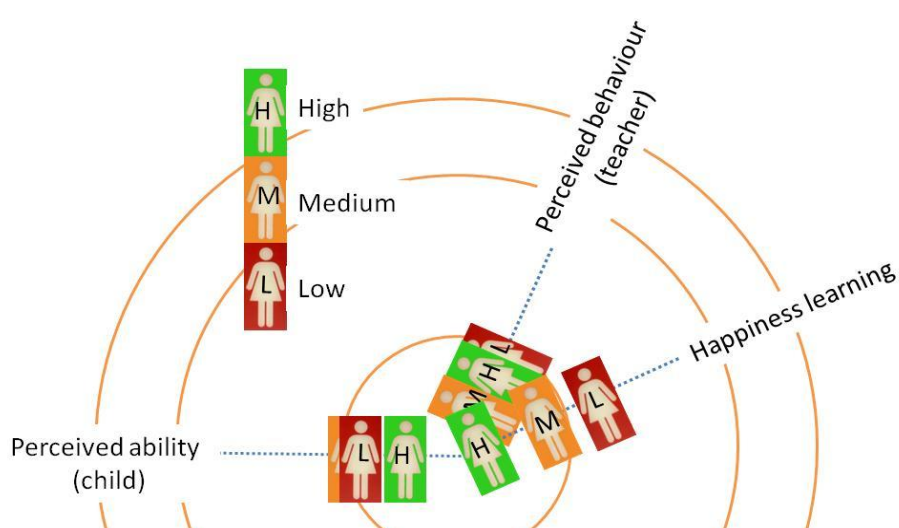


Figure A10-6 School A Year 1 & 2 girls - School context measures related to the social circle

In School A (Figure A10-6), by contrast, girls who are more aligned to the learning and achievement of the school are more central and, in addition, girls do not appear to be particularly socially isolated on the basis of learning. Certainly considering *happiness learning* together with the alternative measure, *happiness around school*, confirms that girls' overall happiness in School A Turtles is associated with how central they are socially whereas in School S it is the opposite.

By comparison, boys exhibit different characteristics. Year 1 and 2 boys, will generally be more socially central if they are older. In both schools there is evidence that the most socially central boys are in the highest learning groups, most emphatically seen at School S (Figure A10-7).

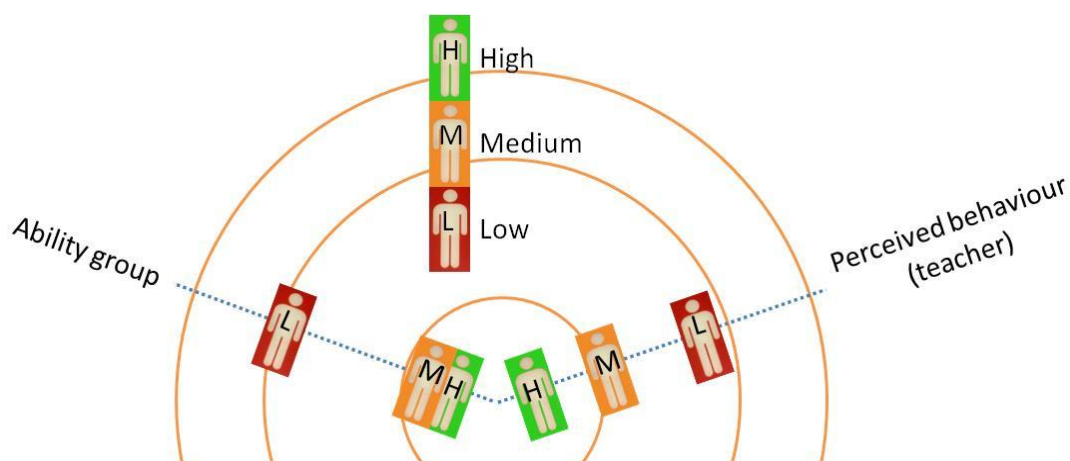


Figure A10-7 School S Year 1 & 2 boys - School context measures related to the social circle

The application of learning or ability groups reflects a culture which developed after Plowden to largely support teaching by stage rather than age (Brogden, 2007). They are reflective of the school culture as the child perceives it and particularly of the public judgments made by the teacher about a child. It appears that for a boy in this case his popularity is dependent in some way on success within a culture. In the reverse, whether a teacher's perceptions of a child's ability are at all influenced by the popularity of a child is unclear.

Differences between the boys' classes relate to behaviour and it is apparent that positive perceptions of behaviour in School S are linked to popularity whereas the opposite is the case in the School A Turtles where boys who are perceived to behave less well are the most popular (Figure A10-8).

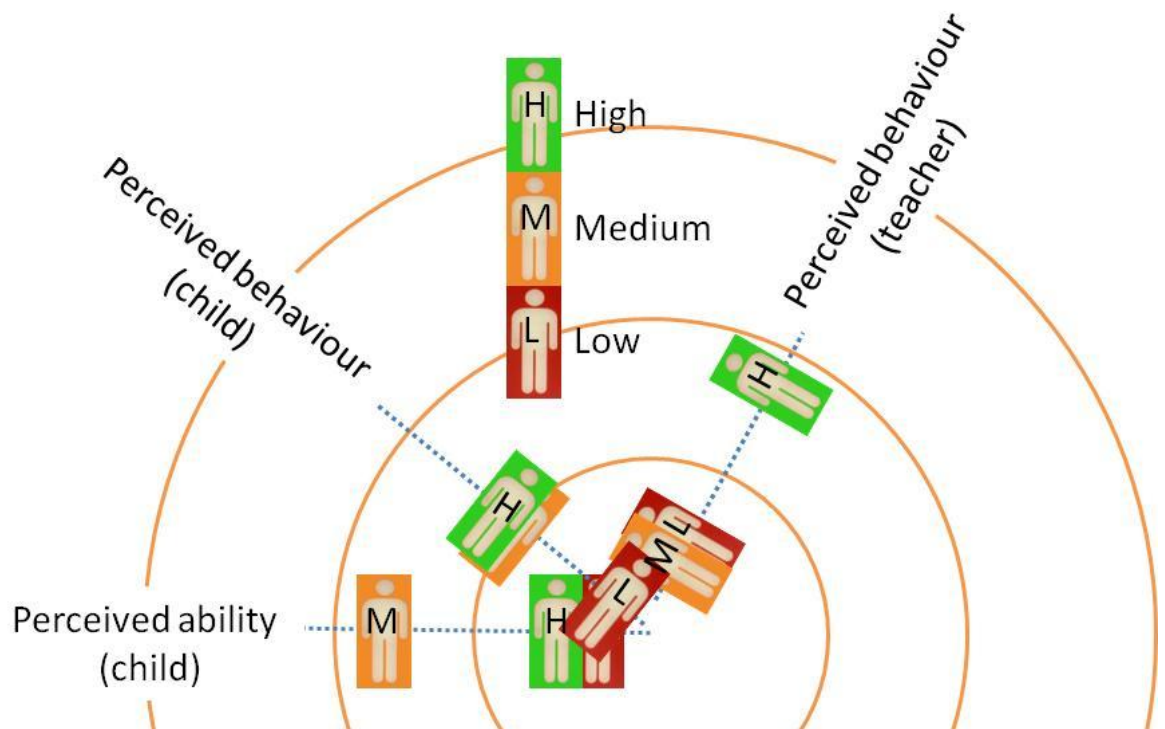


Figure A10-8 School A Year 1 & 2 boys - School context measures related to the social circle

It is revealed that the Year 1/2 School A boys who perceive themselves to behave relatively poorly are also more central socially. This is an indication that in this class environment the boy's perception of his own behaviour has an impact on the social dynamic. This could be because other boys and girls admire them for their behaviour but it could also be that, if their behaviour is poor, they receive more attention from the teacher which may well be a strong factor in overall inclusion and popularity.

10.3 Year 1 and 2 belonging

The *identity cards* study provided a measure of belonging derived from reported identification with the physical environment. As well as assessing what factors affect how socially central a child is, it is also important to look at their sense of belonging in relation to factors like perceived behaviour and expressed happiness. The discussion in the preceding chapters which asserts belonging as pivotal in a child's well-being would indicate that it is a more influential, and global, measure than popularity.

10.3.1 Gender and age

There is no common pattern of belonging based on gender. Boys in School A show greater belonging than girls whereas in School S the situation is reversed. Despite this inconclusion, Year 1 boys and Year 2 girls show the highest belonging in both classes compared with Year 2 boys and Year 1 girls respectively. In these classes both Year 2 boys and Year 1 girls demonstrate particularly low belonging.

Although there is, and has been since Plowden (1967), a motivation to reduce the effect of age on the way Education is organised, teachers will cite the complications of planning lessons associated with mixed age classes. The mixed age classes in both these schools, however, are primarily the result of the school size and intake. How this affects the child is not clear in the research but parents are often sceptical of the impact on their child and the ability of teachers to deliver.

From being a bright happy social child I have an unhappy, lonely child who is falling behind in his work (Pearson, 2009).

It would appear from this research that boys or girls of a particular age group can be affected negatively with respect to well-being in mixed age classes. The research also offers a view of how children's belonging is composed in relation to the cultural, social and aesthetic/functional aspects of the physical school. This is illustrated below for Year 1 & 2 indicating important patterns in the way belonging is constructed.

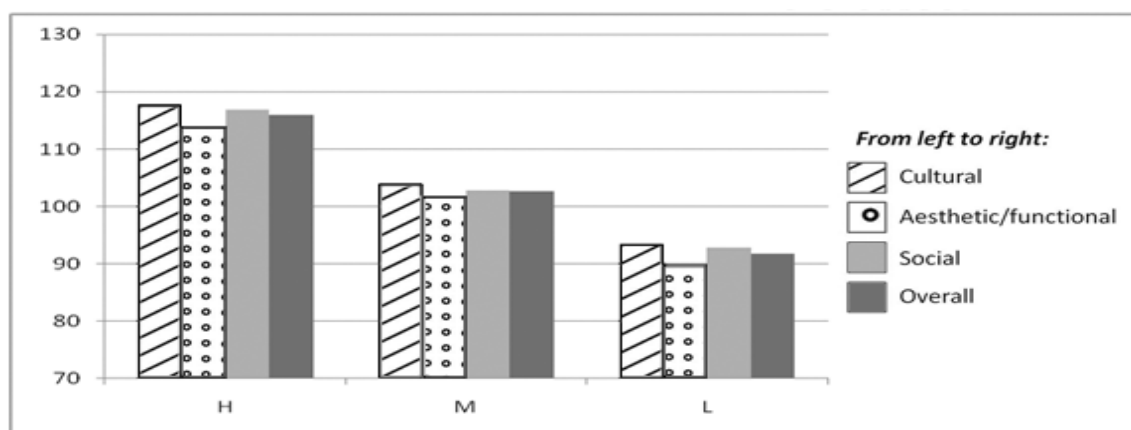


Figure A10-9 Belonging Index for School S Yr 1 & 2 girls shown for those with high, medium and low belonging broken down by cultural, aesthetic/functional and social physical aspects of school

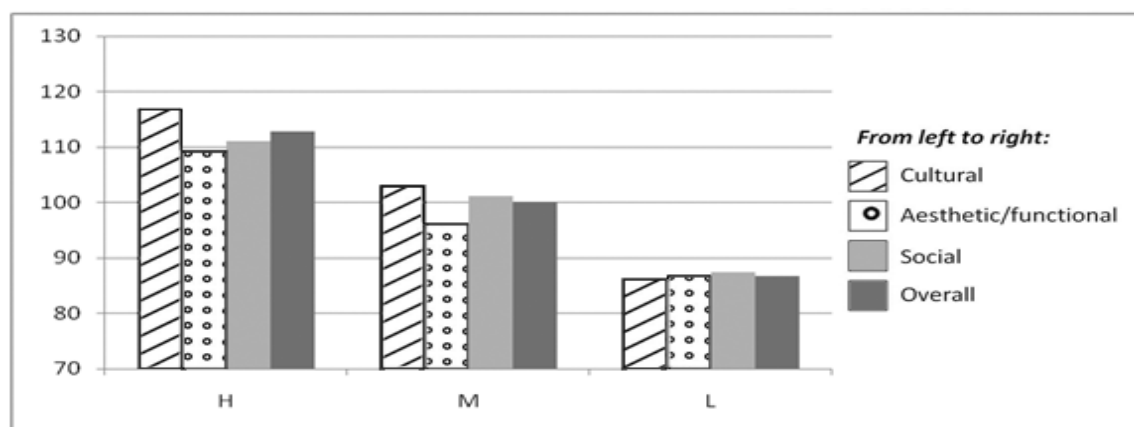


Figure A10-10 Belonging Index for School A Yr 1 & 2 girls shown for those with high, medium and low belonging broken down by cultural, aesthetic/functional and social physical aspects of school

Comparing the girls in the two Year 1 and 2 classes, those with the highest belonging in School S indicate the predominance of identification with parts of the school with cultural and social significance. This pattern generally continues as belonging declines (See Figure A10-9).

In School A girls with high belonging demonstrate a similar allegiance to culturally significant elements of the school. However, socially significant parts of the school become relatively more important to the child's belonging as their belonging decreases. Elements which are more aesthetic or functional also take on greater significance for the child as their overall belonging decreases (See Figure A10-10).

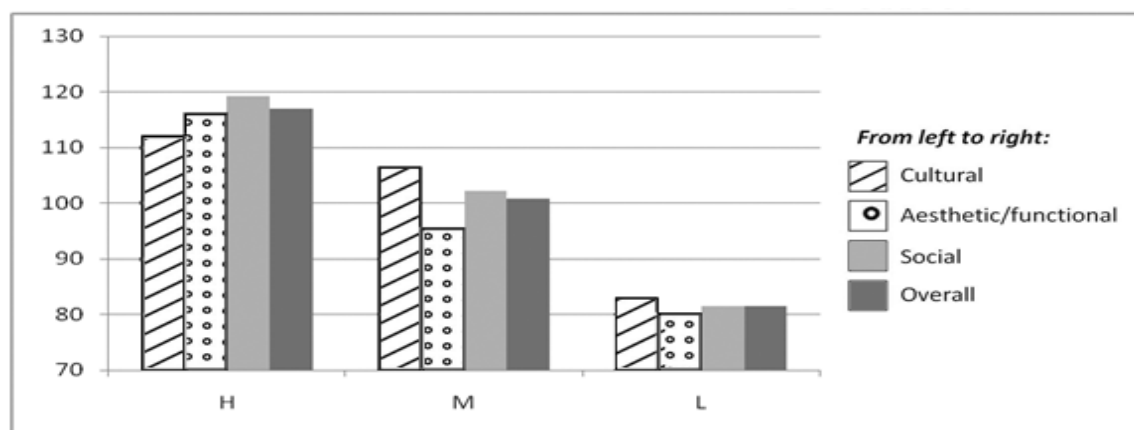


Figure A10-11 Belonging Index for School S Yr 1 & 2 boys shown for those with high, medium and low belonging broken down by cultural, aesthetic/functional and social physical aspects of school - Year 1 & 2

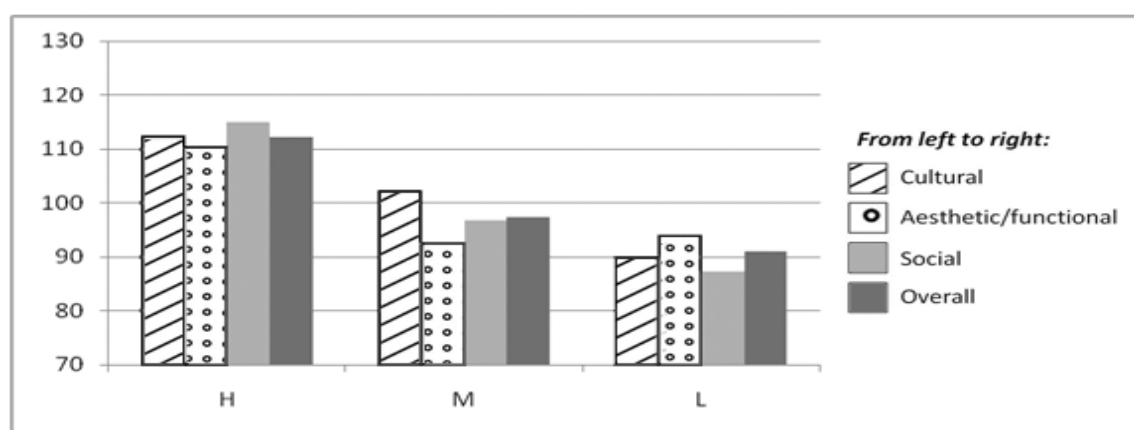


Figure A10-12 Belonging Index for School A Yr 1 & 2 boys shown for those with high, medium and low belonging broken down by cultural, aesthetic/functional and social physical aspects of school - Year 1 & 2

In both schools boys with high belonging demonstrate positive identification with the social elements of the physical school which then is surpassed by identification with places and objects with cultural significance. Arguably this relates to the perceived importance of the adults in mediating the children's social existence at school (See Figure A10-11 & Figure A10-12).

In School A, as seen for the girls although to a lesser degree, the relative importance of the aesthetic/functional school to the boys' belonging increases as their overall belonging decreases.

10.3.2 Belonging and social position

Belonging in relation to a child's social position is logically worth investigation to ascertain the relationship and dependency between the two.

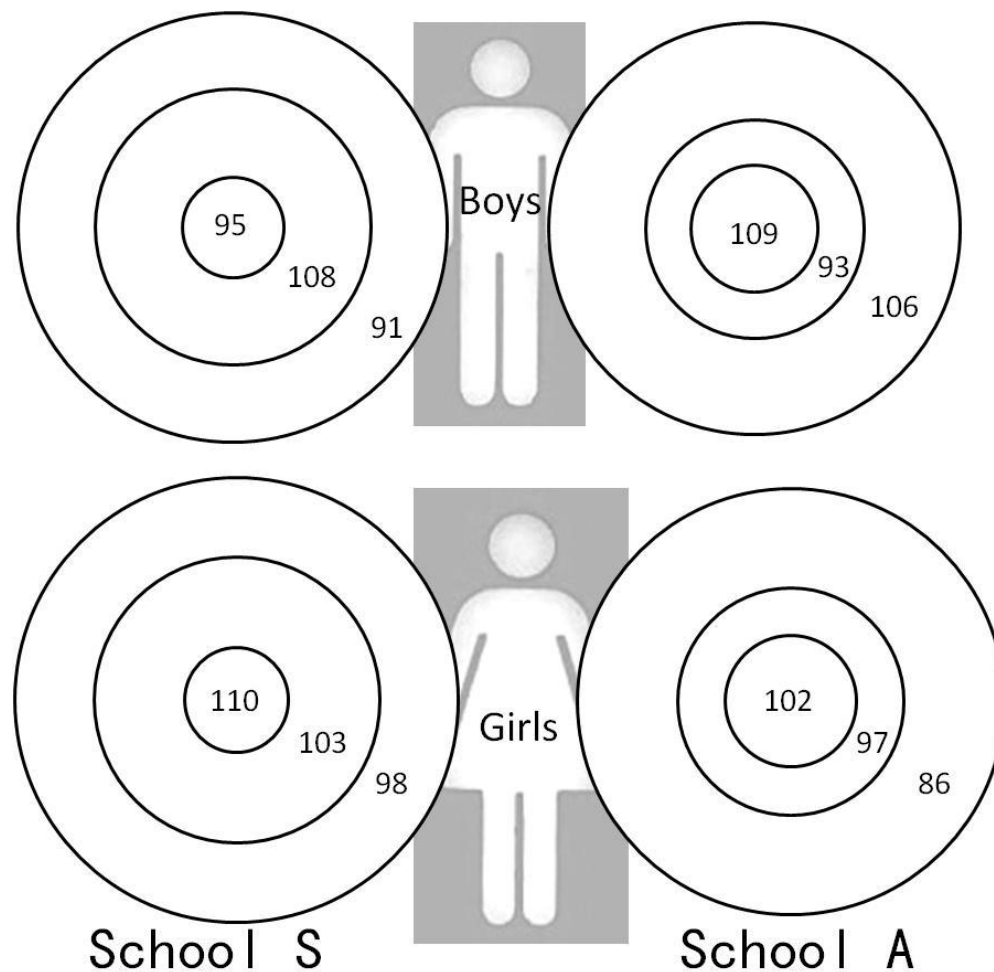


Figure A10-13 Belonging Index compared with social position

In Figure A10-13, girls' belonging is shown to be more aligned to their popularity at both schools compared with the boys. It is most clear for the Pandas where high belonging is strongly associated with the central circle. In School A it is less clear centrally but low belonging is associated with being on the outer social circle.

For boys the relationship appears to be connected either positively or negatively to the social middle. In School S, belonging in the social middle is much greater than the rest of the social circle whereas in School A, it is lowest. The lowest belonging at School S is found in the outer circle which is consistent with the importance of the children's social context raised in previous chapters.

10.3.3 Behaviour

In relation to popularity, the classes differ considerably in the way they perceive their own behaviour, yet it is notable that the highest perceptions of behaviour occur in the outer social circle for boys and girls.

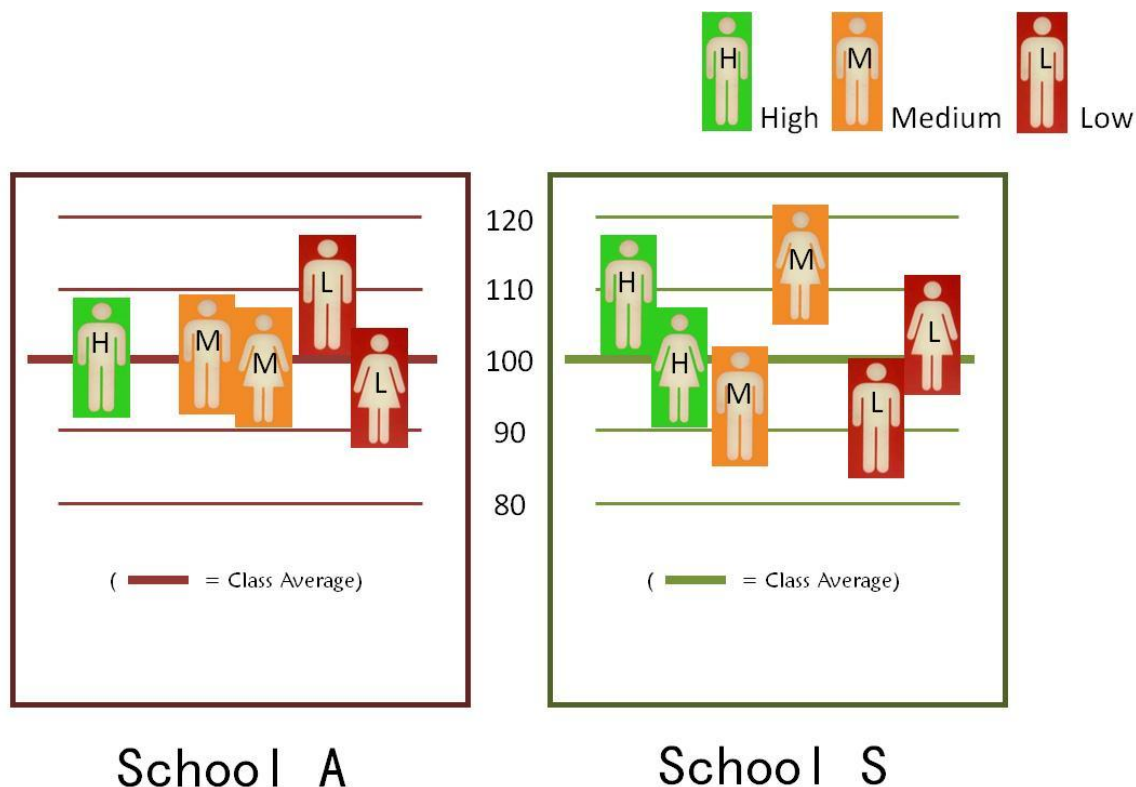


Figure A10-14 Belonging Index in relation to a child's perceived behaviour (High, medium or low) - Year 1 & 2

Considering belonging in relation to a child's perceived behaviour indicates that the boys' belonging at School S declines with lower perceptions of their own behaviour. School A boys demonstrate the opposite. It is of note that none of the School A girls perceive themselves to behave very well and belonging falls slightly as perceptions get worse. At School S it is noticeable that girls who perceived themselves to be of medium behaviour had the greatest sense of belonging. Figure A10-14 illustrates the pattern of this relationship.

At School S boys who viewed their behaviour as medium were noticeably oriented to the physical elements of school with social significance whereas the boys with low perceived behaviour and high belonging were most aligned to elements of cultural importance.

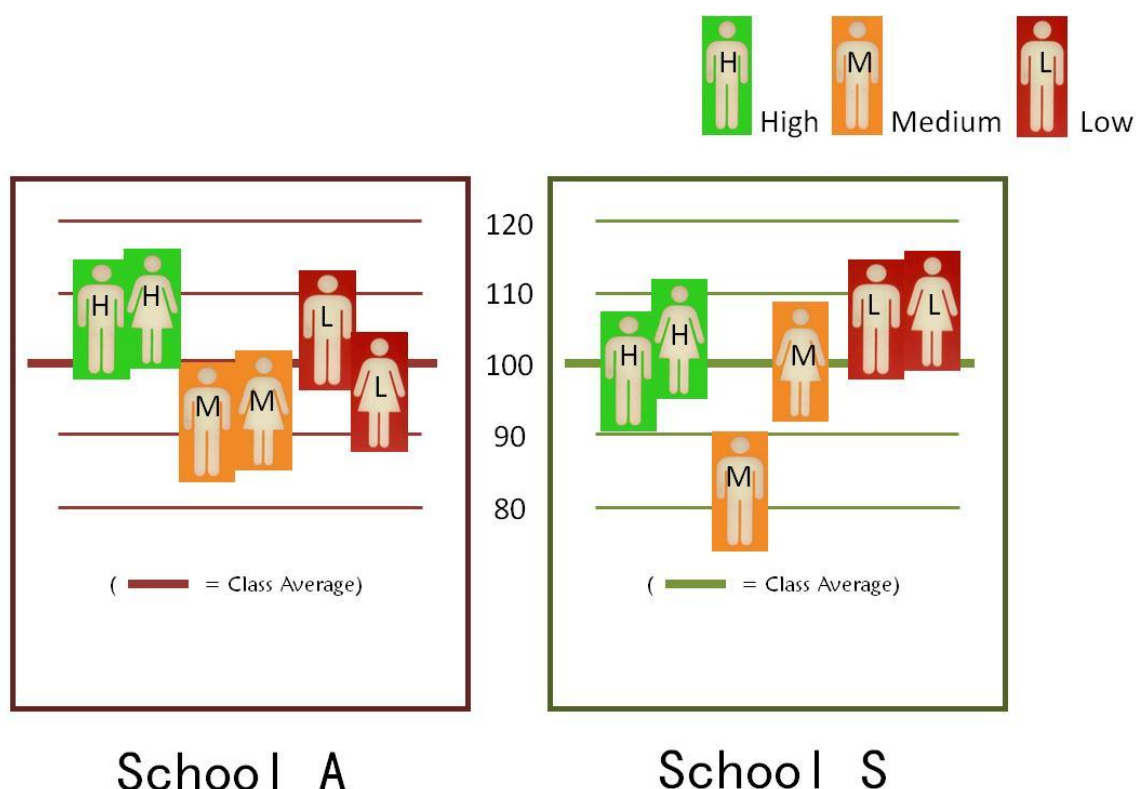


Figure A10-15 Belonging Index in relation to a teacher's perception of the child's behaviour (High, medium or low) - Year 1 & 2

When the teacher's perception of the child's behaviour is considered certain patterns can be seen in across both classes. For boys and girls, belonging is average or higher for those whom the teacher considers to behave well. Boys, in particular illustrate lower belonging if their behaviour is considered medium; cross referencing this, the same group of boys at School A shows noticeably less connection with social aspects of the physical school as indicated in Figure A10-16.

Boys illustrate high belonging again if their behaviour is considered to be relatively poor. This is feasibly indicative of a need for attention, in which poor and good behaviour receive the teacher's attention whereas average behaviour does not warrant it. Perversely behaviour may be adapted to either extreme to manipulate attention and enhance a sense of belonging. The results suggest that it is more important to the boys.

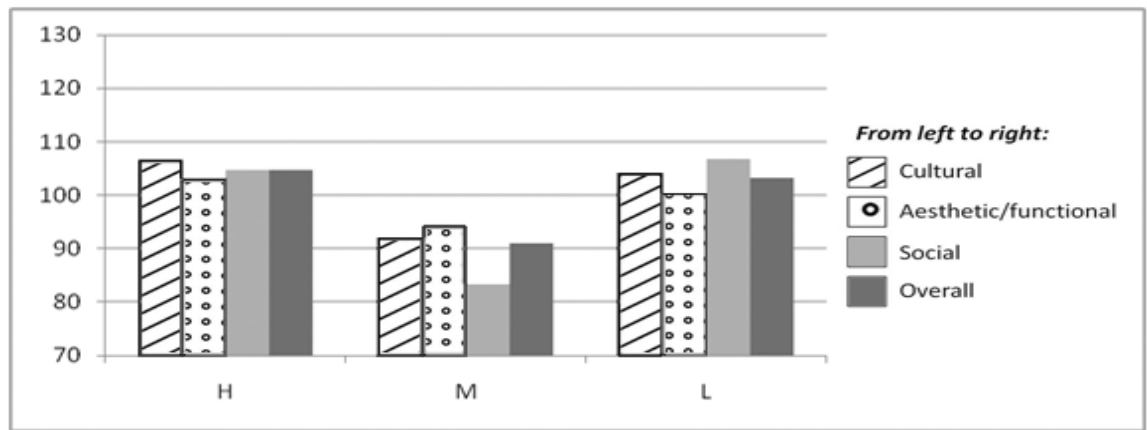


Figure A10-16 Belonging Index for School A boys considered by the teacher to be of High, Medium or Low behaviour broken down by cultural, aesthetic/functional and social physical aspects of school - Year 1 & 2

10.3.4 Reported happiness

In both classes the Year 1 & 2 boys who express the greatest happiness in formal learning situations show the greatest belonging, with some noticeably steep declines as expressed happiness declines. The situation is more marked in School S, which is illustrated in Figure A10-17.

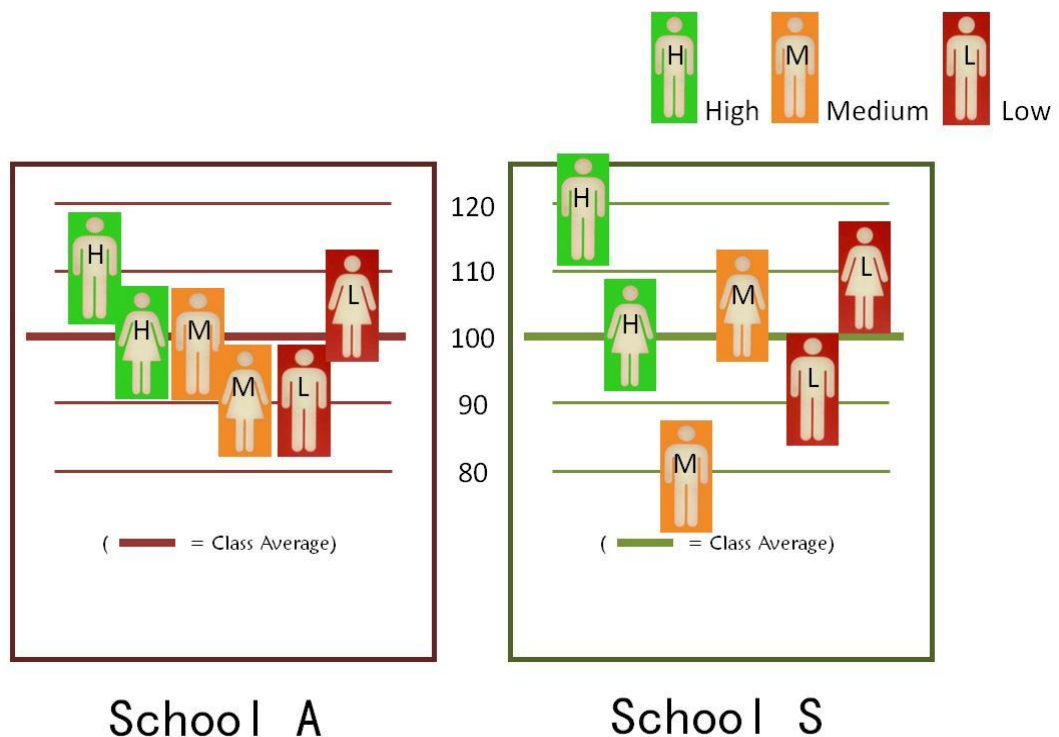


Figure A10-17 Belonging Index in relation to expressed happiness learning (High, medium or low) - Year 1 & 2

Conversely girls in both schools demonstrate that belonging is greater if their expressed happiness learning is low suggesting that, at this age, learning appears to be less significant in a girls' overall well-being. Throughout the research process, a number of children expressed strong disaffection with learning. Kieren's negativity stemmed from his perception that he was behind others in his progress. Significantly his words came across as something that he had been told:

I write like a 2 year old and I'm nearly seven.

Happiness around school offered similar results although these were not as pronounced as *happiness learning*.

10.3.5 Ability and ability group

In both classes, boys who believe they are most able have the highest sense of belonging although, demonstrating a mismatch between the two measures, boys belonging increases the lower the teacher perceives their ability to be. Additionally in both schools also, the boys who perceive their ability to be high illustrate a strong inclination to the physical elements of the school which are social in nature.

Girls' belonging however, on the whole, appears to be resilient to their academic self-concept although girls whom the teacher perceives to be of high ability, in both classes, have the lowest belonging. Despite this lack of clarity, girls at School A illustrate a definite pattern in which belonging is greatest the higher their ability group is. The relationship for girls at School S is less obvious but belonging is least in the lowest ability group. This is shown in Figure A10-18.

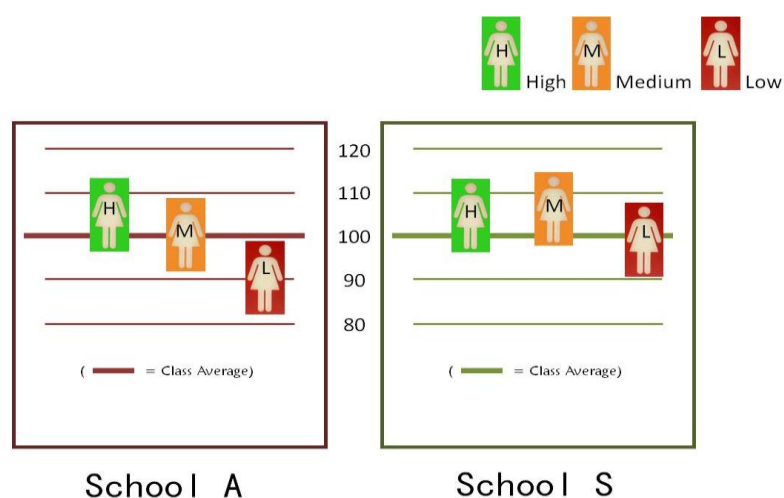


Figure A10-18 Girls' Belonging Index associated with High, Medium and Low ability groups - School A and School S Year 1&2

10.3.6 Year 1 and 2: Review

This discussion of the findings has revealed that there are several common features between the two Year 1 & 2 classes. There is evidence that two relatively distinct circles exist in each class, founded on gender and, overall, girls are more socially discriminating than boys.

Although there are contradictions in the results, there are clear distinctions between the responses of children in defined groups like age, gender and ability groups. A balance appears to be formed which reflects groupings of age (year group) and gender.

In School A, girls' popularity appears to relate to their positive relationship with aspects of learning and perceptions of behaviour which contrasts with the boys for whom popularity relates to lower academic and behavioural self-concepts. In School S the reverse is true. This indicates a reactive social system which is based on clearly defined organisational groupings in the school.

In both schools girls' belonging is related to their social position and, on the whole, as girls' belonging declines at School A, a shift from positive identification with cultural features to features of school with social significance is detected. For School S a balance between cultural, social and aesthetic/functional elements is maintained as belonging falls. The School A boys on the other hand demonstrate a shift from social to the aesthetic/functional features as their belonging falls whereas in School S the boys indicate a shift to cultural elements.

It is possible that such shifts to the cultural school relate to children's dependence on adults as mediators of their social interactions. There is also an indication at this age that boys' relationships with behavioural and academic concerns are linked to attention from the teacher. In the School A Turtles, which is observed to be operated by the teacher as a determinedly inclusive class, the boys with the greatest belonging are those who perceive their behaviour to be poorest. In the School S Pandas the opposite is the case and, through observation, the class culture towards inclusion was also opposite. Additionally it is apparent that the class is more socially intense than in School A, both in terms of the size of the social circle and the relationships which exist. This seemingly is connected to the degree of social intervention the teacher exerts but also to the children's community backgrounds.

Appendix 11: Recognition and understanding results

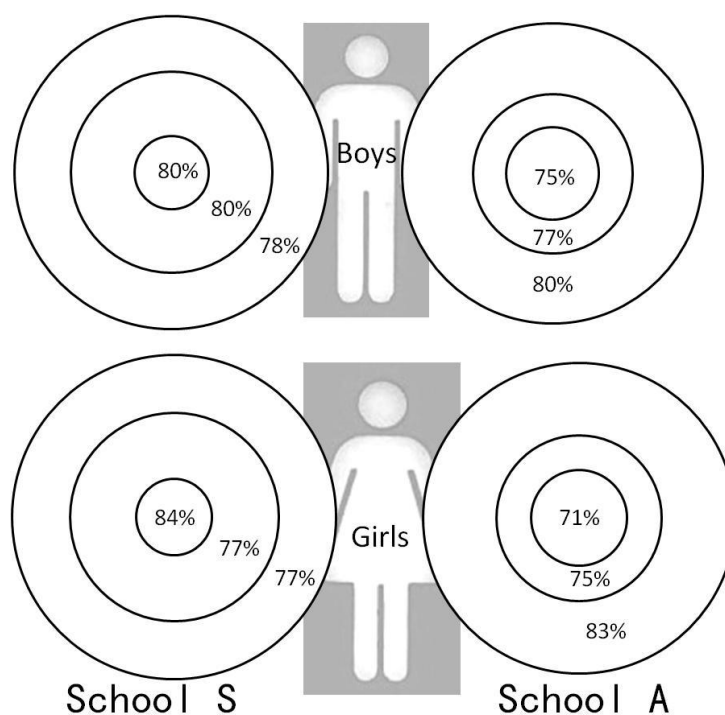


Figure A11-1 Observation and recognition percentage across the social circle - Year 1 & 2

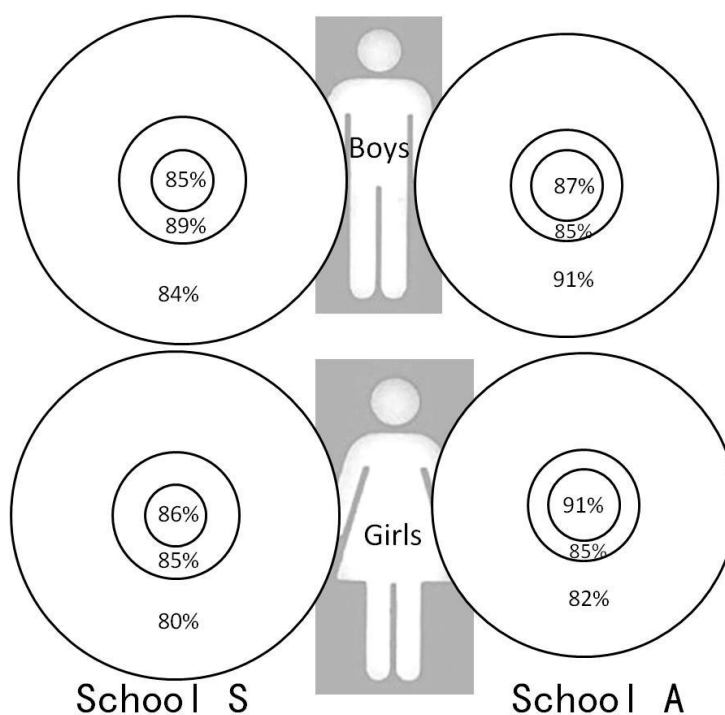


Figure A11-2 Observation and recognition percentage across the social circle - Year 5 & 6

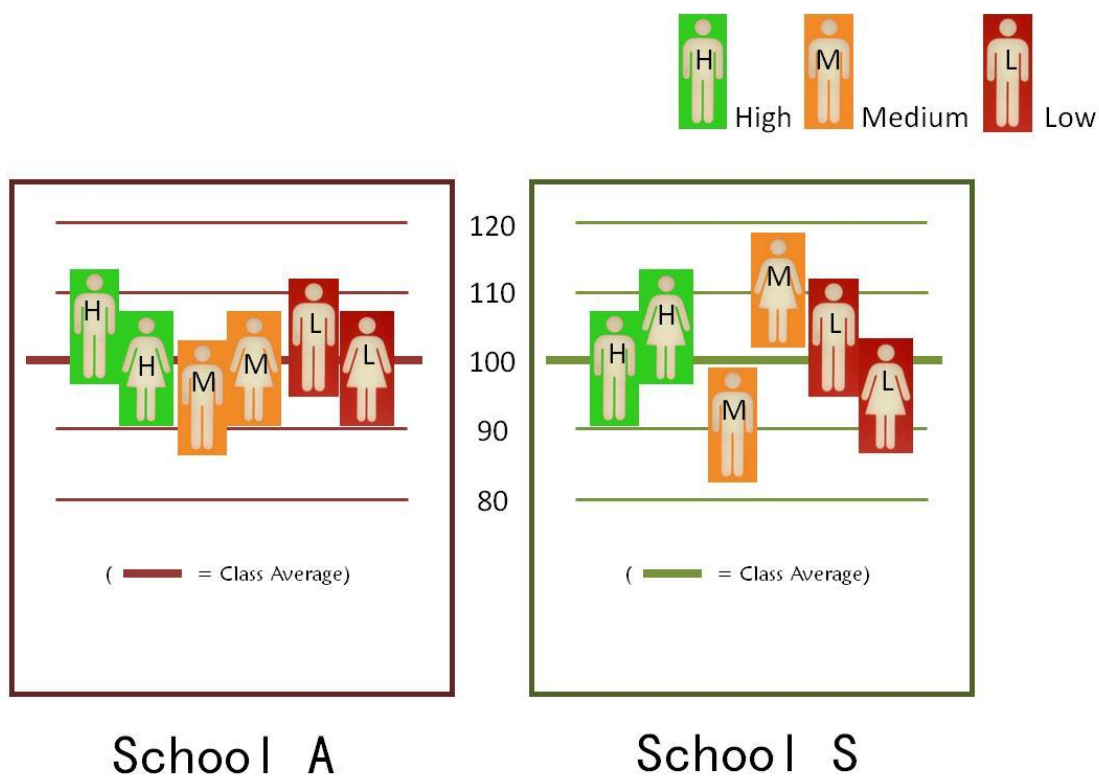


Figure A11-3 Belonging Index by High, medium and low recognition and understanding - Year 1 & 2

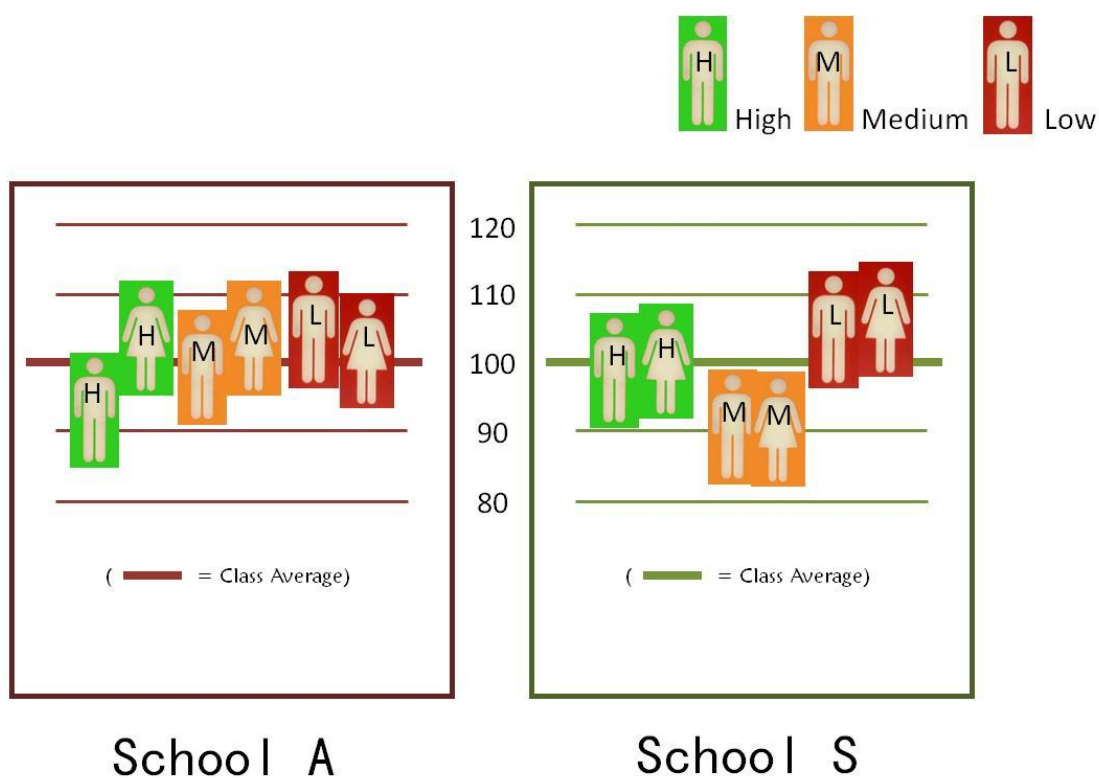


Figure A11-4 Belonging Index by High, medium and low recognition and understanding - Year 5 & 6